DRIVER EDUCATION

UNIVERSITY
OF MICHIGAN

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HEARINGS

BEFORE A

SUBCOMMITTEE OF THE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE HOUSE OF REPRESENTATIVES

EIGHTY-FIFTH CONGRESS

FIRST SESSION

ON

H. R. 5416

A BILL TO PROMOTE SAFETY IN TRANSPORTATION BY MOTOR VEHICLE IN INTERSTATE COMMERCE BY ASSISTING THE STATES TO ESTABLISH PROGRAMS FOR DRIVER EDUCATION

JUNE 10, 17, AND 24, 1957

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DRIVER EDUCATION

MONDAY, JUNE 10, 1957

HOUSE OF REPRESENTATIVES,
SPECIAL SUBCOMMITTEE ON TRAFFIC SAFETY
OF THE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D. C.

The subcommittee met at 10 a. m., pursuant to recess, in room 1334, House Office Building, Hon. Kenneth A. Roberts (chairman of the subcommittee) presiding.

Mr. ROBERTS. The Subcommittee on Traffic Safety will please come to order.

Before commencing with our witnesses this morning, I would like to commend the American Automobile Manufacturers Association for the resolution which the board of directors adopted last week, on June 6, recommending that none of its members participate in automobile racing events, and that its members cease promoting speed and horsepower in advertising.

I would also like to state that I feel the Subcommittee on Traffic Safety has been very important in persuading the Automobile Manufacturers Association to stress safety, and I now look forward to industry talking horsesense instead of horsepower to the great intelligent American public in whom we all place our faith. Without objection, we will include the resolution at this point in the record.

(The resolution follows:)

A RESOLUTION

Whereas the Automobile Manufacturers Association and the members of this board of directors share the public interest in increasing the safety of highway travel; and

Whereas the manufacturers of automobiles have directed their efforts for many years toward developing and maintaining the performance characteristics of vehicles at levels consistent with highway conditions and the requirements of the using public, utilizing research and testing facilities, laboratories and engineering proving grounds to conduct tests under controlled and scientific conditions and standards, and can best serve the public by continuing these efforts; and

Whereas the Automobile Manufacturers Association believes that the automobile manufacturers should encourage owners and drivers to evaluate passenger cars in terms of useful power and ability to provide safe, reliable, and comfortable transportation, rather than in terms of capacity for speed:

Now, therefore, this Board unanimously recommends to the member companies engaged in the manufacture and sale of passenger cars and station wagons that they—

(1) Not participate or engage in any public contest, competitive event, or test of passenger cars involving or suggesting racing or speed, including acceleration tests, or encourage or assist employees, dealers, or others, or furnish financial, engineering, manufacturing, advertising, or public relations assistance, or supply "pace cars" or "official cars," in connection with any such contest, event, or test, directly or indirectly;

(2) Not participate or engage in, or encourage or assist employees, dealers, or others to engage in, the advertising or publicizing of: (*a*) Any race or speed contest, test, of competitive event involving or suggesting speed, whether public or private, involving passenger cars, or the results thereof; or (*b*) the actual or comparative capabilities of passenger cars for speed, or the specific engine size, torque, horsepower, or ability to accelerate or perform, in any context that suggests speed.

Mr. ROBERTS. The hearing this morning has been called to consider H. R. 5416, a bill to promote safety in transportation by motor vehicle in interstate commerce, by assisting the States to establish programs for driver education.

During testimony previously received by the Traffic Safety Subcommittee, the subcommittee was concerned about the number of young people involved in automobile accidents, much greater in proportion to the number of young drivers. Several studies made of groups which had received driver training showed a marked improvement in reduced accident rates, and traffic violations, over groups studied which had no formal driver training.

Because such driver training programs may prove to be extremely helpful in reducing the staggering toll of automobile accidents the Nation now suffers, this subcommittee is here today to consider H. R. 5416.

We are pleased that you witnesses who have worked in the field of driver training are able to appear before the subcommittee this morning.

(The bill referred to follows:)

[H. R. 5416, 85th Cong., 1st sess.]

A BILL To promote safety in transportation by motor vehicle in interstate commerce by assisting the States to establish programs for driver education

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Driver Education Act of 1957".

SEC. 2. In order to aid the development and preservation of a national transportation system by highway adequate to meet the needs of the commerce of the United States and the national defense, and to provide for the greatest safety in the use of highways it is hereby declared to be the policy of Congress to promote safety in transportation by motor vehicle in interstate commerce by assisting the States in the establishment of driver training programs.

SEC. 3. As used in this Act—

(1) The term "States" means the several States, and the Territories of Alaska and Hawaii, the Commonwealth of Puerto Rico, and the District of Columbia.

(2) The term "Secretary" means the Secretary of Health, Education, and Welfare.

SEC. 4. (a) For the purpose of assisting the States in the development of driver education programs, there is authorized to be appropriated for the fiscal year beginning July 1, 1957, and annually thereafter—

(1) $28,000,000 for youth driver education programs, to be apportioned among participating States in the proportion that the population of the particular State bears to the total population of all participating States, determined in accordance with the last preceding United States census; and

(2) such sums as may be necessary for administrative expenses (including salaries) incurred by the Secretary in carrying out this Act.

(b) The funds appropriated under authority of subsection (a) of this section shall be used for assisting the States to carry out the purposes of this Act, including, but not limited to, the maintenance of adequate programs of administration, supervision, and teacher training; salaries and necessary travel expenses of teachers, teacher trainees, supervisors, and directors of driver education programs; securing necessary educational information and data as a basis for the proper development of programs of driver education; purchase or rent of necessary equipment and supplies for driver education programs. All expenditures for the purposes set forth in this section shall be made in accordance with

the State plans for driver education programs required by section 5 (b) of this Act.

SEC. 5. (a) In order to secure the benefits of the appropriations provided for in section 4 (a) of this Act, a State must, through its legislative authority, accept the provisions of this Act and designate or create a State board, consisting of not less than three members and having all necessary power to cooperate with the Secretary, in the administration of the provisions of this Act.

(b) The State board, in order to secure the benefits of the appropriations authorized by this Act, shall prepare plans showing the types of driver education programs for which it is proposed the appropriations be used, qualifications of teachers, and plans for the training of teachers. Such plan must provide that driver education shall be given in schools or classes under public supervision or control and such education shall be designed to provide maximum degree of education in safe driving practices, that the State or local community or both shall provide the necessary equipment determined by the State board with the approval of the Secretary as a minimum requirement in such State for driver education training, that the total amount expended for the maintenance of such education in any school or class receiving the benefit of such appropriation shall be not less annually than the amount fixed by the State board with the approval of the Secretary, as the minimum for such schools or classes in the State. Such plans shall be submitted by the State board to the Secretary and if the Secretary finds them to be in conformity with the provisions and purposes of this Act it shall approve such plans. The State board shall make an annual report to the Secretary on or before September 1 of each year on the work done in the State and the receipts and expenditures of money under the provisions of this Act.

SEC. 6. (a) A State, in order to receive the benefits of this Act, must match by State or local funds, or both, 100 per centum of the appropriations made under authority of section 4 of this Act.

(b) For each dollar of Federal money expended under this Act for salaries of teachers of driver education, the State or local community or both shall spend an equal amount for such salaries. Appropriations for salaries of teachers of driver education shall be devoted exclusively to the payment of salary for such teachers having the minimum qualifications set up for the State by the State board with the approval of the Secretary.

SEC. 7. (a) No part of any appropriation made under authority of this Act shall be expended in such a manner as to utilize the services of driver trainees for private profit.

(b) Not more than 5 per centum of the amount appropriated in any year for each of the purposes specified in section 4 (a) shall be used for the purchase or acquisition of equipment.

SEC. 8. (a) Each participating State shall, through the legislative authority thereof, appoint as custodian for appropriations made under authority of this Act its State treasurer, who shall receive and provide for the proper custody and disbursements of all money paid to the State from such appropriations.

(b) The Secretary of the Treasury through the Division of Disbursement of the Treasury Department shall, upon the certification of the Secretary, pay, in equal semiannual payments on the first day of July and January of each year, to the custodian for driver education programs of each State, designated as provided in subsection (a), the moneys to which the State is entitled under the provisions of this Act. The money so received by the custodian for driver education programs for any State shall be paid out on the requisition of the State board as reimbursement for expenditures already incurred to such schools and other organizations as are approved by the State board and are entitled to receive such moneys under the provisions of this Act.

SEC. 9. (a) Whenever any portion of the fund annually allotted to any State has not been expended for the purposes provided for in this Act, the sum equal to such portion shall be deducted by the Secretary from the next succeeding annual allotment for such fund to such State.

(b) Whenever the Secretary determines that the allotment of moneys to any such State is not being expended for the purposes and under the conditions provided for in this Act, future allotments of moneys to such State shall be withheld. Whenever an allotment is withheld from any State, the State board of such State may appeal to Congress, and if Congress shall not direct such sum to be paid within one year from the date of such appeal, the sum shall be covered into the Treasury.

(c) Whenever a custodian appointed under authority of section 8 (a) certifies to the Secretary that his State does not require all or any part of the sums ap-

portioned to it under section 4 (a) (1), the sum not so required shall be reapportioned among the remaining participating States.

SEC. 10. If any portion of the moneys received by the custodian for driver education of any State, for any purpose specified in this Act, shall be diminished or lost, it shall be replaced by such State, and until replaced no subsequent appropriation for such education shall be paid to such State. No portion of any moneys appropriated under this Act shall be applied, directly or indirectly, to the purchase, erection, preservation, or repair of any building, or for the purchase or rental of lands, or for the support of any religious or privately owned or conducted school or college.

SEC. 11. The Secretary shall make an annual report to Congress on or before December 1 of each year on the administration of this Act and shall include in such report the reports made by a State board as provided by section 5 (b) of this Act.

Mr. ROBERTS. The first witness will be Mr. Stanley F. Withe, secretary, Ætna Casualty & Surety Co., Hartford, Conn.

STATEMENTS OF STANLEY F. WITHE, SECRETARY, ÆTNA CASUALTY & SURETY CO., HARTFORD, CONN.; AND PAUL B. CULLEN, SUPERINTENDENT, PUBLIC EDUCATION DEPARTMENT, ÆTNA CASUALTY & SURETY CO., HARTFORD, CONN.

Mr. ROBERTS. In acknowledging your presence, Mr. Withe, I want to thank you and your company for the very fine job you have done in the field on driver training and for making it possible for the members to have the opportunity to inspect your mobile training unit, which is parked over on the Member's parking lot.

We appreciate very much the effort and expense your company has gone to in this field.

We are delighted to have you.

You may proceed with your testimony.

Mr. WITHE. Thank you.

Mr. Chairman, members of the committee: I am Stanley F. Withe of Hartford, Conn., secretary of the Ætna Casualty & Surety Co.

First, I would like to applaud the work of your committee and the wisdom of the Congress in this effort to aid in solving what has become one of the Nation's greatest social problems, the mounting highway accident toll. When you consider that at the present accident rate, 1 out of every 2 Americans faces the possibility of being killed or injured in a highway crash at some point in his lifetime, none of us can deny the seriousness of the situation.

Already, you have heard from many educators and safety leaders that the best long-range hope for future traffic safety lies in the training of our young people. This view has been echoed by the White House Conferences on Highway Safety, the National Safety Council, the National Education Association's commission on safety education, and many other organizations.

Despite this universal agreement on the value of driver training, however, the program is far from being universally adopted in our schools. Slightly better than half of our high schools have even a classroom course in driver education. Only 1 out of 3 eligible students gets any practice driving. And only 1 out of 5 gets the nationally recommended course.

What is the reason for this? Fundamentally, it is the high cost of the program, particularly the high cost of giving practice driving instruction in a dual-control car. Here the teacher becomes almost a tutor, instructing only the 1 pupil who is behind the wheel, while 2 or 3 others ride as observers in the rear seat.

Normally, 1 teacher handles 25 to 35 pupils in a classroom. But to give this same group practice driving instruction in dual-control cars would require several times as many teachers. As a result, per-pupil costs have become almost prohibitively high. And, equally serious in this day of critical teacher shortages, is the large number of additional teachers such a program would require.

There are two ways that would contribute to solving the problem. One is to provide financial aid to the schools. A second is to find some means of reducing the cost, both in dollars and in teacher time.

Much has already been done in the field of financial aid. Thirteen States now provide some form of subsidy to schools giving driver training. The most liberal of these financial aid programs have been established in California and Michigan. California pays 75 percent of the costs of the practice driving instruction, up to a maximum of $30. Michigan subsidizes the program to the extent of $25 per pupil.

In addition, hundreds of business and civic organizations have given liberal financial support to the driver-education program. This has been done through scholarships for the training of driver-education teachers and by providing training aids, safety films, and other materials to the schools. No one could review the history of the growth of driver education throughout the country without recognizing the important role the American Automobile Association and the Association of Casualty and Surety Companies have played in the development of the program.

The automobile industry, likewise, has earned the gratitude of all for its program of making dual-control cars available to the schools. Curiously, though, as more training cars have been put into service the more apparent has been what in our opinion is the key to the whole problem.

For, in effect, each car, whether purchased or loaned free, has become another classroom that had immediately to be staffed by another teacher. Thus, even though the car cost the school nothing, it did not solve the big problem that most educators feel is the crux of the high cost of driver education—the costly and ineffcient use of the most expensive factor in all forms of education—teacher time.

It is to the solution of this particular problem that Ætna Casualty & Surety Co. has directed its efforts.

Long ago, we had recognized that as an insurance company it is our responsibility to help the motoring public drive more safely as well as to provide protection against the financial consequences of highway accidents. In 1935, we pioneered the first device to test a driver's reaction time, the forerunner of a whole series of testing and training devices designed to promote greater safety on our highways. With nearly a quarter of a century of experience in this field, we were perhaps uniquely qualified for the task we undertook.

Out of our developmental program, conducted in close cooperation with driver education specialists, came the concept of a classroom trainer that would apply to driver training the same principle that the Air Force and commercial airlines had so successfully used in pilot training.

Like the Link trainer and Dehmel Flight Simulator, which provided flight training on the ground, this driver training device would enable students to get part of their behind-the-wheel training right in the classroom. Special training films would portray the highways

and traffic situations used to teach the students to drive. And it would be a multiplace device so that one teacher could instruct groups of students at the same time.

This was the Ætna Drivotrainer. These pictures show 2 typical 15-place classrooms which are in operation today. The small training cars are equipped with standard controls that function just like those in real cars. On the screen, at the front of the classroom, are projected the special films that give each student a driver's eye view of the road, much like what he would see through a car windshield. There are now some 20 films in the Drivotrainer course. They are designed to cover by progressive stages practically every phase of driving. In this picture you see the master recording unit where the instructor gets an instantaneous printed score of each student's actions. In one film, a student may be scored individually on 200 or more driving actions, each of which is recorded as a permanent printed report for the instructor's use. The recorder operates automatically, freeing the instructor to observe the students personally if he wishes.

With the development of the first "pilot" model of the Drivotrainer in 1953, Ætna financed the placement of several research installations to evaluate the instructional effectivensss of the Drivotrainer. In a few minutes, Mr. Cullen, who is superintendent of our public education department, will give you a more detailed report on the results of this research. Mr. Cullen has been closely connected with this phase of the program and has had firsthand experience working with educators in the many schools where the Drivotrainer has now been adopted.

Some schools, however, did not await the completion of the research before adopting the Drivotrainer. Oak Park, Ill., became the first to purchase a Drivotrainer classroom from the manufacturer in 1954. But with the publication of the research results establishing the effectiveness and the economy of the Drivotrainer, its spread has become more and more rapid. Many State boards of education now endorse the use of the Drivotrainer as a substitute for half the instruction normally given in dual-control cars.

Most leading insurance companies now grant insurance-rate discounts to youthful drivers who are graduates of driver-education courses in which Drivotrainer instruction has replaced a substantial part of the required dual-control-car training.

Today there are 30 high schools and colleges in 10 States which have adopted the Drivotrainer, nearly 3 times as many as a year ago. Springfield, Mo., has become the first multischool system in the country to become completely Drivotrainer equipped. Iowa is leading the States with a total of seven Drivotrainer classrooms.

In many of these areas, the Drivotrainer program is not limited to student training alone, but is being extended to serve adult driver-education programs. In some places, like Iowa, it is also serving special retraining centers set up especially for chronic traffic-law violators.

Use of the Drivotrainer has not been restricted to this country, either. One 15-place classroom has been purchased by the National Education Association in Sweden. Another was shipped a year ago to the Government of Thailand.

What benefits have led schools to adopt the Drivotrainer? First is the matter of savings in per pupil costs. We recognize that there

will be differences from school to school in teachers' salaries, scheduling, and other factors. But, assuming an average teacher salary of $5,000 a year in a school having 5 class periods per day, the cost of training students using only dual-control cars would come to $45.84 per pupil. Substituting a 15-place Drivotrainer, however, for one-half the required road training would reduce the cost to $31.03 per pupil, a saving of almost one-third in the total per pupil cost. This adds up to an annual saving of more than $13,000 for 900 students, the approximate capacity of a 15-place Drivotrainer during a school year. On this basis, the total savings over an 18-month period would more than offset the purchase price of a 15-place Drivotrainer classroom installation. This exhibit, which I would like to submit in evidence, shows the basis for these savings.

Mr. ROBERTS. Would you like for that exhibit to be placed in the record?

Mr. WITHE. I would appreciate that, if it is possible.

Mr. ROBERTS. Without objection, the exhibit may be placed into the record at this point.

(The document referred to follows:)

COST COMPARISON, 15-PLACE DRIVOTRAINER VERSUS DUAL CONTROL ONLY

Assuming $5,000 teacher salary, 180 days per school year, five 60-minute teaching periods per day, 4 pupils per dual-control car per period, dual-control course of 24 periods (6 driving hours) on the road, Drivotrainer course of 12 periods (3 driving hours) on the road, and 15 periods on the Drivotrainer.

A. The following formula was used for figuring teacher capacity:

$$\frac{\text{Teaching periods per year} \times \text{students per period}}{\text{Required periods per student}}$$

B. 15-place Drivotrainer classroom course:

Teaching costs:		
Periods of instruction per year	900	
Pupils trained per period	15	
Pupils trained per teacher per year	900	
Teacher salary per year	$5,000	
Teaching cost per pupil		$5.55
Operating costs:		
Average capital investment for 15-place Drivotrainer	$18,000	
Amortized cost per pupil (10 years, 9,000 pupils)		2.00
Maintenance cost of Drivotrainer per year	$500	
Maintenance cost per pupil		.56
Total		8.11

C. Dual-control on-the-road program:

Teaching costs:		
Periods of instruction per year	900	
Pupils trained per period	4	
Pupils trained per teacher per year	150	
Teacher salary per year	$5,000	
Teacher salary cost per pupil		$33.33
Operating costs:		
Gasoline and oil per year	$250	
Insurance	150	
Miscellaneous	100	
Total	500	
Operating cost per pupil		3.33
Total cost per pupil		36.66

D. Combined course:

3 hours (12 periods) dual-control instruction	$18.33
15 periods Drivotrainer instruction	8.11
Total cost per pupil	26.44

Per pupil:	
Dual-control only	$36.66
Combined course	26.44
Saving per pupil	10.22

Savings per pupil	10.22
Annual savings (900 pupils)	9,198.00

A Comparison of Costs and Manpower, Using a 6-Place Drivotrainer Versus a 12-Place Drivotrainer to Train 360 Students a Year

The most expensive, time-consuming part of a driver-education program is the on-the-road phase. Because the Ætna Drivotrainer method reduces the amount of on-the-road instruction required by as much as 50 percent, substantial savings can be effected in teaching costs.

In certain cases where a 6-place Drivotrainer, for instance, may seem to be adequate and produce cost savings, it may prove even more economical to install a 12-place Drivotrainer and use it only part of the time. The mathematics of this suggestion follow:

Assuming: $5,000 teacher salary, 5 periods a day at 180 days (900 periods per year), 15 periods on the Drivotrainer, 15 periods (3 hours) on dural control with combined course, 30 periods (6 hours) on dual control only 50-minute periods, 4 students per dual-control car each period on the road, $500 per year (cost of one dual-control car for upkeep and insurance).

A. The following formula was used for figuring teacher capacity:

$$\frac{\text{Teaching periods per year} \times \text{students per period}}{\text{Required periods per student}}$$

B. Dual-control cost only ($45.83 per student for 30 periods, training 120 students annually with single teacher and one dual-control car):

$$\frac{900 \text{ teaching periods} \times 4 \text{ students per period} = 120 \text{ students per year}}{30 \text{ periods per student}}$$

Teacher salary	$5,000
Cost of dual-control car	500
Annual cost	5,500

$5,500 divided by 120 equals $45.83 per student per year.

C. Six-place Drivotrainer unit can handle 360 students operating full time (180 per semester) with single teacher.

$$\frac{900 \text{ periods} \times 6 \text{ students}}{15 \text{ periods per student}}$$

Teacher cost per pupil	$13.88
Amortized cost per pupil ($10,000 for 10 years)	2.77
Annual maintenance cost per pupil ($250 per year)	.69
Total per pupil cost	17.34

Combined course cost

15 periods of dual control	$22.92
15 periods of Drivotrainer	17.34
Total	40.26

To train 360 students would require 1 Drivotrainer instructor and 1½ dual-control teachers, or a total of 2½ teachers. Using dual control only, for 30-period course to train 360 students would require 3 full-time teachers.

Financial savings

Dual control for 30 periods	$45.83
Combined course	40.26
Annual per pupil savings	5.57

Or $2,005.20 per 360 students trained annually.

D. Twelve-place unit can handle 720 students annually, operating 5 periods a day, or 360 students annually operating half time.

Operating 900 periods per year

Teacher cost per pupil (720 students)	$6.94
Amortized cost per pupil (10 years, $15,400)	2.14
Maintenance cost per pupil ($400 annually)	.56
Total per pupil cost	9.64

Operating 450 periods per year

Teacher cost per pupil (360 students)	$6.94
Amortized cost per pupil (10 years, $15,400)	4.28
Maintenance cost per pupil ($350 annually)	.97
Total per pupil cost	12.19

Running Drivotrainer 450 periods per year will leave 450 periods to be used for dual-control driving by the same teacher. In this time he can train 120 students in dual control, leaving 240 students to be trained by one full-time dual-control teacher. A total of 2 teachers compared to 3 teachers when using dual control only.

Combined course cost

15 periods of Drivotrainer	$12.19
15 periods of dual control	22.92
Total cost	35.11

Financial savings

Dual control for 30 periods	$45.83
Combined course	35.11
Annual savings per pupil	10.72

Or $3,859.20 per 360 students trained annually.

Mr. WITHE. Besides monetary savings, the Drivotrainer also makes more efficient use of teacher time. With a 15-place Drivotrainer, for example, a school can train half again as many pupils with no increase in the teaching staff.

In addition to being able to train more pupils at less cost, the schools have also recognized that the Drivotrainer is raising the quality of the training which the students are getting. It is also making it possible to provide training in certain areas that could not otherwise be covered.

In his discussion, Mr. Cullen will report to you on some of the specific ways in which Drivotrainer instruction is proving better than other methods.

I would like to give you two reactions to the introduction of the Drivotrainer in two communities in Iowa.

When voting to purchase Drivotrainer classrooms for each of two new high schools in Cedar Rapids, a member of the board of education stated:

> If we can save one life with this it will be worth the money.

In a letter to the editor of the Waterloo, Iowa, newspaper a 16-year-old boy wrote:

> Use of the Ætna Drivotrainer system in our class provides many benefits, but the one for which I am most grateful is the confidence it gives the student. On my third time behind the wheel of a real car I drove at ease through the streets. The operation was simple. I had done it many times before—in the classroom.
>
> I would like to extend my personal thanks to the voters of this school district for making such a program available. Not only thanks but congratulations are in order. For you have made a wise investment in the future of our city and of its citizens.
>
> I am certain that all my fellow students who have participated in this program wish to join me in expressing our sincere appreciation.
>
> (Signed) WAYNE W. DRAPER.

In this day of modern motor travel, the California driver in a crash on an Indiana highway may be the victim of a Maryland driver. As the key to future highway safety, therefore, driver education should be the universal concern of all of us.

Your investigation has been a constructive one, for the attention you have focused on traffic safety and for the legislation you have now proposed.

We have reservations, however, about the 5-percent restriction on spending for equipment, as specified in the bill your committee has drafted, H. R. 5416.

Dr. Norman Key, of the National Commission on Safety Education, indicated to you in his testimony that while many schools are now using cars loaned by automobile dealers, the driver-education program cannot operate on a sound basis until all necessary equipment is school owned. Many schools would like to buy cars but are hampered by lack of funds that can be allocated for this purpose.

Such a restriction would also limit the number of Drivotrainer classrooms and other equipment which could be purchased through this program. This is not such a serious matter as the purchase of dual-control cars, however, because while each new dual-control car increases the number of teachers required and the teacher cost, as I have explained, each Drivotrainer classroom installed decreases the number of teachers required and lowers the teacher cost. The purchase of Drivotrainer equipment is therefore in a way self-liquidating and actually lowers the school operating budget.

When the Drivotrainer equipment is leased or purchased on the installment plan, no capital outlay whatever is required to put a classroom in operation. The proposed subsidy would, of course, assist a school system faced with the problem of expanding its driver-training facilities to include all eligible students.

We believe that if you decide to subsidize driver training you should place no restrictions on local authorities as to the manner in which the funds are to be spent. It is our feeling that this decision should be left to State and local boards of education which are most conversant with State and local needs and should be in a position to change operating procedures and standards of instruction if in their judgment it seems desirable.

As a mark of progress in our efforts to achieve greater highway safety, the new Federal highway program, which makes the task of your committee so urgent, is an important milestone. We commend the law-enforcement agencies in many States for the increased vigor with which they are tracking down traffic-law violators.

But despite all else that may be done, it is still the man behind the wheel that causes most accidents. Admittedly, education is the best way of making him a safer driver, but only when education encompasses all drivers can it achieve maximum effectiveness. We believe that in this new approach, making behind-the-wheel instruction possible in the classroom, we are making an important contribution toward the goal of all of us, a generation of safer drivers.

Thank you very much.

Mr. ROBERTS. Thank you, Mr. Withe, for your statement. We certainly appreciate your appearance before the committee and appreciate very much the interest and very fine work that you and your associates, and your company, have been doing in the field of driver education.

I might say that the bill before us, H. R. 5416, was drawn, actually, before I was acquainted with the Drivotrainer. Had I known of the work that has been accomplished with this equipment, I would not have insisted on the 5-percent restriction that can be spent for equipment.

It may be, Mr. Withe, that some of the members of the subcommittee will have some comments or questions.

Mr. WITHE. May I just make the suggestion that perhaps you would better defer questions until after Mr. Cullen's presentation. He may answer some of the things that are in your mind.

Mr. ROBERTS. I think perhaps, since this is a joint presentation, if there is no objection on the part of the subcommittee, we will have Mr. Cullen make his statement, and then we will have a period for questions.

Mr. CULLEN. Mr. Chairman, and members of the committee, I am Paul B. Cullen, superintendent, public education department, Ætna Casualty & Surety Co.

The purpose of any training device, the Link Trainer, the Dehmel Flight Simulator, the Helicopter trainer, the Drivotrainer, is twofold:

1. To give training at less cost than can be given in the real thing;

2. To give training that cannot be offered in the real thing due to practical difficulties or hazards involved.

But before any trainer can be accepted as part of the instructional curriculum, it must be validated by research; scientific proof must be offered that it does the job it is intended to do.

The Drivotrainer was designed to reduce, not eliminate, expensive on-the-road time in a dual-control car.

To measure how well it did the job, we made several research installations with city boards of education and with colleges. These institutions ran independent studies extending over a period of several years.

May I offer in evidence these two studies—one by the Los Angeles City school system, and the other by Iowa State Teachers College.

If I may, I would like to submit those for the record.

Mr. ROBERTS. Without objection, these exhibits will be made a part of the record.

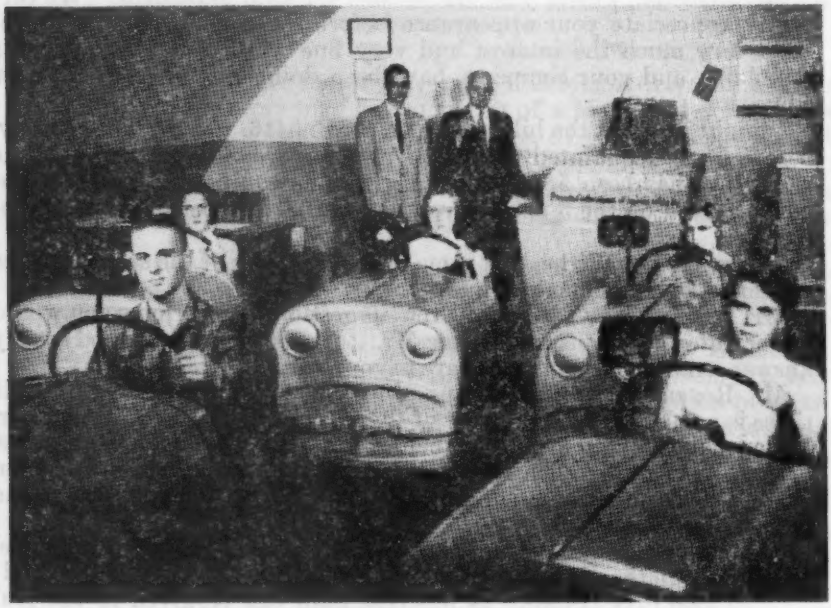
(The documents referred to follow:)

THE EFFECTIVENESS OF THE ÆTNA DRIVOTRAINER IN DRIVER EDUCATION [1]

INTRODUCTORY STATEMENT

Research with the Ætna Drivotrainer was undertaken at the Iowa State Teachers College in an effort to assess the worth of the device as a replacement for part of the dual-control-car instruction found in standard high school driver-education programs.

Five Drivotrainer units together with projection and monitoring equipment and instructional films were loaned to the college by the Ætna Casualty & Surety Co. so that the research could be carried on. The equipment was installed in the college driver-training laboratory in December 1954, and research began in January 1955. This report summarizes the major findings from that date through June 1956.



DRIVOTRAINER CLASSROOM AT IOWA STATE TEACHERS COLLEGE

Standing at the recording console are (left to right) John Denny, classroom instructor, and Bertram L. Woodcock, director of safety education for the college.

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Personnel Conducting the Research.
Population Studied.
Criteria for Instructional Effectiveness.
Experimental Procedures and Findings.
Summary of Experimental Procedures and Findings.
Implications of Experimental Outcomes.
Summary and Conclusions.
Appendix.

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[1] Data supplied by Gordon J. Rhum, associate professor of education, Iowa State Teachers College, and Bertram L. Woodcock, director of Safety Education, Iowa State Teachers College. Summarized by Tom A. Lamke, coordinator of research, Iowa State Teachers College, Cedar Falls, Iowa, July 1956.

PERSONNEL CONDUCTING THE RESEARCH

Experimental procedures were devised and supervised by Dr. Gordon J. Rhum, associate professor of education,[2] in consultation with Dr. Tom A. Lamke, coordinator of research.[2] Instruction in driver education was supervised by Mr. Bertram L. Woodcock, director of safety education.[2] Experimental and control-driver education classes were taught by Mr. Woodcock; by Mr. Richard A. Meyerhoff; instructor in driver education at East High School, Waterloo, Iowa, by Mr. John B. Denny, instructor in driver education at West High School, Waterloo, Iowa, and by Mrs. Jeanette Winegarden, formerly driver education instructor at Dike, Iowa.

Acknowledgement is due Superintendent Jack M. Logan, of the Waterloo, Iowa, public schools, and to Superintendent Paul B. Cullen, public education department, Ætna Life Affiliated Companies, for their courtesy and interest.

THE POPULATION STUDIED

Subjects participating in the experiment were public high school students from Waterloo and Cedar Falls, Iowa. The two cities are included in a metropolitan area of some 100,000 population. The socioeconomic status of the pupils, their curricular, extracurricular, and social activities, and the driving and traffic conditions are all representative of those in the northern Midwest.

THE CRITERIA FOR INSTRUCTIONAL EFFECTIVENESS

One criterion of instructional effectiveness in the first phase of the research was student performance on the Iowa driver's license examination, the Iowa driver's license examination scoresheet. This is a checklist developed by the Iowa Department of Public Safety; it is used in initial driver's licensing examinations in Iowa. The possible score is 216 points; while riding with the subject the licensing examiner rates him as he drives an automobile over public streets and highways for a period of from 10 to 30 minutes. Subjects in this experiment were rated on the Iowa driver's license examination scoresheet by an Iowa State highway patrolman assigned to this research project by the State commissioner of public safety because of the patrolman's special competence as an examiner.

A second criterion, and the major criterion used in all of the research here reported, was a final driver's test devised by Mr. Bertram L. Woodcock. This test incorporates selected material from licensing examinations used by several States, from tests devised by several authorities in this field, and certain features devised by Mr. Woodcock. It is a 146-point checklist, and was marked by the instructor as he rode with the student while the latter drove for some 30 minutes over a standard route on public streets and highways. A copy of the final driver's test is appended to this report.[3]

In the first phase of the research, the final driver's test was compared with the Iowa driver's license examination scoresheet. The highway patrolman assigned to this task filled out the Iowa scoresheet; a competent driver-education instructor riding in the back seat of the test car filled out a final driver's test. On a sample of 36 students, the product-moment correlation between the 2 sets of ratings was 0.86. For a sample of this size, a correlation of 0.33 is significant at the 5-percent level.

The reliability of the final driver's test was checked using another group of 36 students; 2 competent driver-education instructors independently rated each of the students as he took his final driving test. The product-moment correlation between the two sets of ratings was 0.70.

This evidence suggests that the reliability of the final driver's test is sufficiently high for use with groups, but is undesirably low for use with individuals.

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[2] Iowa State Teachers College.
[3] See appendix on p. 19.

EXPERIMENTAL PROCEDURES AND FINDINGS

The research reported here was conducted to determine whether 4 (and later 3) hours of driving instruction in a dual-control car plus instruction with the Drivotrainer produced results at least as good as those produced by the standard driver-education course involving 6 hours of instruction in a dual-control car.[4] The hypothesis to be tested was the null hypothesis that there is no difference in the effectiveness of the two instructional methods.

The time, amount of equipment, and personnel available, all dictated that the experimentation be conducted by repeatedly comparing instructional outcomes in a series of pairs of small groups to which students had been randomly assigned, one group being taught by the experimental method with the Drivotrainer; the other, by the standard method. The use of small groups to test the null hypothesis in a context such as this one is a standard procedure; it has but one potential disadvantage. Research may show that the difference in criterion means consistently favors the control group, but yet is so small that it can be attributed to chance. Such an outcome would raise the question as to whether the control method would not be proved superior to the experimental method if larger groups were used for experimentation. However, previous studies with the Drivotrainer[5] gave the experimenters some confidence that such would not be the outcome in this study; in fact it was not.

Each of 3 qualified instructors taught in one or more of the experimental groups, each of 4 qualified instructors taught in one or more of the control groups. This arrangement tended to separate effectiveness of a given instructional method from the personality or bias of a given instructor.

Additional details of experimental procedures and outcomes are found in the summary which follows.

SUMMARY OF EXPERIMENTAL PROCEDURES AND FINDINGS

Group 1[6]

Source.—East Waterloo, Iowa, High School, grades 10 and 11.

Size.—Nine in experimental and nine in control groups.

Experimental design.—Students in experimental and control groups were matched on Otis I. Q.'s; Iowa Tests of Educational Development, composite scores; Iowa Silent Reading Test, total scores; high school grade point average beginning with the sophomore year; family ownership of automobile; and sex. The nine pairs were randomly assigned to experimental or control group. The t-test for the significance of the difference in criterion means for related measures is appropriate for this design.

Criteria.—(1) Iowa Driver's License Examination Score Sheet of Iowa Department of Public Safety; (2) Final Driver's Test.

Instruction given

	To each student in experimental group by Meyerhoff	To each student in control group by Meyerhoff
Class periods devoted to basic instruction	10	10
Class periods in Drivotrainer	16	0
Total hours spent in driver-training car	16⅔	18
Hours of driving time in driver-training car	3⅓	6
Hours of observation in driver-training car	13⅓	12

Findings.—(1) Difference in means for Driver's License Examination Scoresheet favored control group, but not significantly ($t=0.52$; $t70\%=0.40$, $t60\%=0.55$). Hypothesis of equal instructional effectiveness retained.

[4] A minimum of 6 hours of driving time per student is frequently recommended or required; see, for example, High-School Driver Education Policies and Recommendations (Washington, D. C.: National commission on safety education, National Education Association, 1950).

[5] Wayne G. Wrightstone, George Forlano, and Richard J. O'Conner, Interim Report on the Evaluation of the Ætna Drivotrainer (New York: Board of Education, 1953).

[6] The group also included nine pairs of students who could not be randomly assigned to methods because of scheduling difficulties, but who were retained in this first trial so that experimenters could become more familiar with the Drivotrainer. Since no statistical tests could be made of the results for these nine pairs of students, they are not included in this report.

(2) Difference in means for Final Drivers Test favored experimental group, but not significantly (t=0.02; t90%=0.13). Hypothesis of equal instructional effectiveness retained.

Group 2

Source.—Cedar Falls, Iowa, Junior High School, grade 9.

Size.—Five in experimental and five in control groups.

Experimental design.—Students in experimental and control groups were matched on Otis I. Q.'s; Iowa Tests of Educational Development, composite scores; grade point averages in 8th grade academic subjects and personal traits; previous driving experience; and family ownership of automobile. The t-test for the significance of the difference in criterion means for related measures is appropriate for this design.

Criterion.—Final driver's test.

Instruction given

	To each student in experimental group by Woodcock, Winegarden	To each student in control group by Winegarden
Class periods in Drivotrainer	15	0
Total hours spent in driver-training car	20	30
Hours of driving time in driver-training car	4	6
Hours of observation in driver-training car	16	24

Findings.—Difference in means favored experimental group, but not significantly (t=.98; t40%=.94; t30%=1.19). Hypothesis of equal instructional effectiveness retained.

Group 3

Source.—East Waterloo (Iowa) High School, grades 10 and 11.

Size.—Nine in experimental and nine in control groups.

Experimental design.—The students were taken to be a random sample from the population available, and were randomly assigned to the experimental or control group. The t-test for the significance of the difference in criterion means for independent small samples is appropriate for this design.

Criterion.—Final driver's test.

Instruction given

	To each student in experimental group by Woodcock, Meyerhoff	To each student in control group by Meyerhoff
Class periods devoted to basic instructions	10.0	10.0
Class periods in Drivotrainer	14.0	0
Total hours spent in driver-training car	15.4	23.3
Hours of driving time in driver-training car	4.0	6.0
Hours of observation in driver-training car	11.4	17.3

Findings.—Difference in means favored experimental group, but not significantly (t = .18; t90% = .13; t80% = .26). Hypothesis of equal instructional effectiveness retained.

Group 4

Source.—West Waterloo (Iowa) High School, grades 10, 11, and 12.

Size.—Seven in experimental and seven in control groups.

Experimental design.—The students were taken to be a random sample from the population available, and were randomly assigned to the experimental or control group. The t-test for the significance of the difference in criterion means for independent small samples is appropriate for this design.

Criterion.—Final drivers test.

Instruction given

	To each student in experimental group by Woodcock, Denny	To each student in control group by Denny
Class periods devoted to basic instruction	10.0	10.0
Class periods in Drivotrainer	14.0	0.0
Total hours spent in driver-training car	15.4	23.3
Hours of driving time in driver-training car	4.0	6.0
Hours of observation in driver-training car	11.4	17.3

Findings.—Difference in means favored experimental group, but not significantly (t=.04; t90%=.13). Hypothesis of equal effectiveness of instructional methods retained.

Group 5

Source.—East and West Waterloo (Iowa) High Schools, grades 10 and 11.

Size.—Twenty-two in experimental and twenty-two in control groups.

Experimental design.—The students were taken to be a random sample from the population available, and were randomly assigned to the experimental or control group. The t-test for the significance of the difference in criterion means for independent small samples is appropriate for this design.

Criterion.—Final driver's test.

Instruction given

	To each student in experimental group by Denny, Meyerhoff	To each student in control group by Denny, Meyerhoff
Class periods devoted to basic instruction	10	10
Class periods in Drivotrainer	15	0
Total hours spent in driver-training car [1]	9–12	18–24
Hours of driving time in driver-training car	3	6
Hours of observation in driver-training car [1]	6–9	12–18

[1] Depending on whether 3 or 4 students were riding in the car.

Findings.—Results slightly in favor of experimental group; t-test applied to groups 5 and 6 combined, as indicated below.

Group 6

Source.—West Waterloo (Iowa) High School, grades 10, 11, and 12.

Size.—Eighteen in experimental and twenty-five in control groups.

Experimental design.—The students were taken to be a random sample from the population available, and were randomly assigned to the experimental or control group. The t-test for the significance of the difference in criterion means for independent small samples is appropriate for this design.

Criterion.—Final drivers test.

Instruction given

	To each student in experimental group by Denny	To each student in control group by Denny
Class periods devoted to basic instruction	10	10
Class periods in Drivotrainer	15	0
Total hours spent in driver.training car [1]	9–12	18–24
Hours of driving time in driver-training car	3	6
Hours of observation in driver-training car	6–9	12–18

Depending on whether 3 or 4 students were riding in the car.

Findings.—Results slightly in favor of experimental group; t-test applied to groups 5 and 6 combined, as indicated below.

Groups 5 and 6

The statistical design for groups 5 and 6 made it possible to combine the data for the 2 groups so that smaller differences might be established as significant than would be the case if the 2 groups were treated separately.

Findings.—Difference in means favored experimental group, but not significantly ($t=1.55$; $t20\%=1.29$; $t10\%=1.66$). Hypothesis of equal effectiveness of instructional methods retained.

IMPLICATIONS OF EXPERIMENTAL OUTCOMES

With the criterion used, 3 hours of dual-control-car instruction plus 15 class periods of Drivotrainer instruction produced results at least as good as those produced by 6 hours of dual-control-car instruction.

As an indication of the utility of the Drivotrainer, comparisons may be made between the amount of instructor time required to provide 6 hours of instruction in a dual-control-car, with the amount of instructor time required to provide 3 hours of dual-control-car instruction and 15 periods of Drivotrainer instruction, and the cost in each case.

During a 180-day school year, with 6 hours a day available for instruction, one instructor can provide 6 hours of dual-control-car instruction to each of 180 pupils. (Usually a driver training program requires that several other pupils, besides the one driving, ride in the car and observe but for the purposes of this discussion the fact is irrelevant.)

With a 5-place Drivotrainer installation, the instructor is able to provide 15 periods of Drivotrainer instruction to 5 pupils at one time; the instructor must then spend 3 hours with each of the pupils in the dual-control car. In this case there is no savings in instructor time, and during a school year, an instructor can train 180 pupils.

With a 10-place Drivotrainer installation, the instructor is able to provide 15 periods of Drivotrainer instruction to 10 pupils at one time; he must then spend 3 hours in the dual-control car with each; a total of 45 hours is required to train the 10 pupils, enabling a single teacher to train 240 pupils annually by this method. Thus, each instructor's capacity is increased by 60 students a year, or a gain of 33⅓ percent. In these circumstances the Drivotrainer stands idle 4 periods per day. By using the Drivotrainer to capacity 6 periods a day, it would be possible for 3 teachers to train 720 students a year as compared to but 540 students when using dual-control cars alone.

With a 15-place Drivotrainer installation, 1 instructor is able to provide 15 periods of instruction to 15 pupils at one time. Each student must be given an additional 3 hours of instruction behind the wheel a dual-control car so that under these conditions only 4 teachers would be required to train fully a total of 1,080 students in 1 year; this represents an increase of 50 percent in instructional efficiency over the dual-control-only method.

A complete driver-education program often involves more than the driving instruction just discussed, but the facts cited indicate the considerations involved in comparing the cost of the standard method of offering driver education with that of driver education using the Drivotrainer.

At an instructional salary of $4,500 per year, the cost per 1,000 pupils of the standard method of providing driving instruction is $25,000 per year in instructional salaries alone. Using the Drivotrainer program examined here, with 15 hours of Drivotrainer instruction and 3 hours of dual-control-car instruction, the cost in instructional salaries per 1,000 pupils is $18,750, with a 10-place Drivotrainer installation. With a 15-place installation, this cost drops to $16,667.

In a given school system there are many other factors besides instructional salaries which determine the total cost of a driver education program. A cost analysis made by one system indicated that a 15-place Drivotrainer installation with 15 periods of Drivotrainer and 3 hours of dual-control-car instruction would result in savings of nearly $12,000 per year per 1,000 students instructed, when compared with a standard program providing 6 hours of dual-control-car instruction.[7]

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[7] An Evaluation of the Teaching Effectiveness of the Ætna Drivotrainer (Los Angeles: Los Angeles City Schools, 1955).

SUMMARY AND CONCLUSIONS

Research with the Ætna Drivotrainer was undertaken at Iowa State Teachers College in an effort to determine whether 4 (and later 3) hours of on-the-road instruction, plus instruction with the Drivotrainer, would be at least as effective in high school driver-education programs as the standard driver-education course presently taught which involves 6 hours of on-the-road instruction.

The major criterion was the final driver's test which incorporates selected material from driver's licensing examinations used by several States, from tests devised by certain authorities in the field of driver education, and certain features devised by one of the experimenters. The test is a checklist of driver knowledge, attitudes, and behavior, and is marked by the driver education instructor as he rides with the student while the latter drives for some 30 minutes over public streets and highways. The test correlates 0.86 with the Iowa Driver's License Examination Scoresheet used in initial driver's licensing examinations in Iowa, and showed a reliability of 0.70 when students were independently rated by 2 instructors. This reliability permits group comparisons, although it leaves something to be desired for individual ratings.

The experimental design involved repeated comparisons of a series of pairs of small groups of high school students; in each pair the experimental group was instructed using the Drivotrainer; the control group received standard driver-education instruction. Each of 3 qualified instructors taught 1 or more of the experimental groups, each of 4 qualified instructors taught 1 or more of the control groups.

The outcomes were as follows:

Group No.	Number of students in—		Class periods in Drivotrainer [1]		Number of hours of dual-control instruction		Group with higher criterion mean	Difference in criterion means significant at 5-percent level
	Experimental group	Control group	Experimental group	Control group	Experimental group	Control group		
1	9	9	16	0	3½	6	Control [2]	No.
1	9	9	16	0	3½	6	Experimental	No.
2	5	5	15	0	4	6	do	No.
3	9	9	14	0	4	6	do	No.
4	7	7	14	0	4	6	do	No.
5	22	22	15	0	3	6	do	[3].
6	18	25	15	0	3	6	do	[3].
5 and 6	40	47	15	0	3	6	do	No.

[1] Class periods were 50 minutes in length.
[2] The criterion in this case was the score on the Iowa driver's license examination score sheet. In all other cases reported the criterion was the score on the final drivers test.
[3] The experimental design was such that groups 5 and 6 could be combined before a statistical test was made of the significance of the difference in criterion means.

The experimental design and the outcomes of the experimentation establish that, with the given criterion, results produced using the Drivotrainer and 3 hours of dual-control-car instruction were at least as satisfactory as the results produced by the standard method of instruction involving 6 hours of dual-control-car instruction. Since groups 3 through 6 were random samples of students who are taking driver education at the east or west Waterloo, Iowa, high schools, or both, the findings are applicable to any group of students with characteristics like those of the student body at these high schools.

It is not known just what characteristics are related to ability to learn to drive an automobile; incidental results of this study suggest that performance on the criterion examination is not related to sex, nor, at least in the normal range, to I. Q. or to composite scores on the Iowa Tests of Educational Development. On the basis of present knowledge it seems probable that the findings would apply to any population of normal high school students in the United States. Additional research should be undertaken before these findings are generalized to include students with markedly unusual I. Q.'s or physical defects, to include other age groups, or in the case of unusual socioeconomic, social, or driving conditions.

Simple computations show that 1 instructor can provide actual driving instructions for about a third again as many students using a 10-place Drivotrainer

installation (with 15 hours of Drivotrainer instruction and 3 hours of dual-control-car instruction) as he can using previous standard instructional methods (with 6 hours of dual-control-car instruction), and about half again as many students as before with a 15-place Drivotrainer installation.

It follows that if the validity of the criterion employed in this study is satisfactory (and it is thought to be among the best available), the decision to use Drivotrainer equipment and procedures in a typical driver-education program hinges largely on the number of students to be instructed and the savings in instructional salaries which may be anticipated through the use of the equipment. Many large schools will find that the savings in instructional salaries will not only amortize the cost of a Drivotrainer installation, but will also permit a significant reduction in the per-pupil cost of providing driver education.

Final Drivers Test

DEPARTMENT OF EDUCATION, IOWA STATE TEACHERS COLLEGE

Name_____ Age_____
Checked by_____ Date_____
Time of test: Beginning_____ End_____
Total points_____ Passed_____ Failed_____

Checking	/	/
Did not adjust seat	1	
Did not adjust mirror	1	
Starting motor	/	/
Did not depress clutch	1	
Did not check gear lever	1	
Forgot to turn on ignition	1	
Starter:		
Not long enough	1	
Too long	1	
Raced motor	1	
Did not feed gas	1	
Wrong order	1	
Starting car	/	/
Use of clutch	/	/
Released too quickly	2	
Released too slowly	1	
Improperly depressed	1	
Use of accelerator	/	/
Applied too suddenly	1	
Too much gas to start	1	
Too little gas at start	1	
Held down between shifts	1	
Use of gears	/	/
Low gear:		
Went too far	1	
Not far enough	1	
Too fast	1	
Too slow	1	
Second:		
Went too far	1	
Not far enough	1	
Too fast	1	
Too slow	1	
High:		
Too slow	1	
Rides clutch	1	
Started with hand brake on	1	
Feeds gas in spurts	1	
Stalled motor	2	
Clashed gears	1	
Selected wrong gear	2	
Unsteady on steering	2	
Eyes down when shifting	2	
Stopping car	/	/
Stopped in wrong position	2	
Too hard on brake	1	
Forgot to use clutch	1	
Too soon with clutch	1	
Late with clutch	1	
Attitudes	/	/
Nervous	1	
Hesitant	1	
Easily distracted	1	
Overconfident	1	
Not alert	1	
Discourteous	1	

FINAL DRIVERS TEST—Continued

DEPARTMENT OF EDUCATION, IOWA STATE TEACHERS COLLEGE—continued

Driving in traffic	/	/
Failed to look for other cars	3	
Drives too fast	3	
Drives too slow	2	
Ran through stop sign	4	
Violated arterial stop law	4	
Ran through red light	4	
Went through an amber	2	
Starts up on amber	2	
Passes in wrong place	2	
Cuts in too soon after passing	2	
Drives too far to left	2	
Drives too far to right	2	
Too close to car in front	2	
Drives off roadway	2	
Brakes too suddenly	2	
Inconsiderate of pedestrians	2	
Blocks pedestrian lane	2	
Inconsiderate of motorists	2	
Cuts corner on right turn	1	
Cuts corner on left turn	3	
Too wide on right turn	3	
Too wide on left turn	1	
Improper steering	2	
Too fast at intersections	2	
Slouches when driving	1	
Too tense when driving	1	
Rides clutch	1	
Tried to start out of gear	1	
Parking	/	/
Too far from curb	2	
Did not set handbrake	1	
Too slow getting in	1	
Poor judgment of direction	1	
Poor judgment of distance	1	
Bumped other car	1	
Starting on hill	/	/
Rolls back	2	
Improper use of clutch-brake	1	
Stalled motor	1	
Not enough gas	1	
Too much gas	1	
Too slow, holds up traffic	1	
Jerks passengers	1	
Signaling	/	/
No signal for left turn	3	
No signal for right turn	2	
No signal for stop	3	
If no signal necessary, failed to look	3	
Signal inadequate	3	
Bumped curb	1	
No signal from parking area	3	
No signal continuously—100 feet	2	

A CONDENSED REPORT OF THE LOS ANGELES STUDY OF THE ÆTNA DRIVOTRAINER

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Appendix J.

[1] Chapter number in the complete report.

The following excerpts are from a report by the Los Angeles City school system safety section describing a recent experimental study conducted at Hollywood High School comparing the Ætna Drivotrainer system of driver education with the present conventional method of using dual-control cars only.

For the sake of brevity, the excerpts in this summary are confined to those sections in the report dealing with the purpose, procedure, results, cost, and conclusion. Omitted are sections discussing other driver-training devices, related studies, methods of statistical analysis used, and a detailed description of the Drivotrainer and its component parts.

A limited number of copies of the complete report have been printed. While they last, copies may be obtained by writing to either the Los Angeles Board of Education, 450 North Grand Avenue, Los Angeles 12, Calif., or to the public education department, Ætna Casualty & Surety Co., 151 Farmington Avenue, Hartford, Conn.

ÆTNA DRIVOTRAINER CLASSROOM—HOLLYWOOD HIGH SCHOOL

CHAPTER I. THE PROBLEM

It is the purpose of chapter I to present the mutual interest of the Los Angeles City Board of Education and the Ætna Casualty & Surety Co., the subject of this study, and to describe action taken in their effort to meet the challenge presented by this problem. The chapter includes a statement of the problem as well as its scope and limitations. Definitions of terms pertinent to the study are properly included and a statement of the organization of the chapters.

A. Introduction

The schools of today are being confronted with an ever-widening responsibility for more adequately preparing the Nation's youth to cope with the modern complexities of life. One of the more pressing problems is to instruct adequately and economically all high-school students in the safe operation of a motor vehicle.

The Ætna Casualty & Surety Co., of Hartford, Conn., has been underwriting the manufacture and development of a device known as the Ætna Drivotrainer. It is their purpose to determine the contribution this device can make toward alleviating or solving many of the present problems in driver instruction.

Mr. Stanley F. Withe, secretary of the Ætna Casualty & Surety Co., Hartford, Conn., met with a committee of the administrative staff of the Los Angeles City

schools in July of 1954 to discuss the possibility of conducting a research study using the Ætna Drivotrainer on a loan basis in one of the high schools of the district.

A contract subsequently was entered into to cover the installation, maintenance, and removal of the Drivotrainer in one of the Los Angeles City high schools. The equipment was installed in Hollywood High School in September 1954.

Mr. Cecil G. Zaun, supervisor of safety, consulted with Dr. Alfred S. Lewerenz and Mr. Howard A. Bowman, evaluation and research section, Los Angeles City schools, on plans for a research study with this device.

Mr. Robert S. Lewis, coordinator of driver education for the Los Angeles City schools, along with Dr. Walter G. Patterson and Mr. Louis I. Bernoff, instructors in the Los Angeles City high schools, were asked to implement these overall plans into a practical experimental program in a Los Angeles City high school.

B. Statement of the problems

The purpose of this study was to determine if students trained in a program involving the Ætna Drivotrainer would have the same driving ability as those trained by the present methods of the Los Angeles City schools. More precisely, the study was conducted to answer the following questions:

1. Does driver attitude as measured by an attitude scale change significantly as a result of either the experimental or the present method of training?
2. Is there a greater significant change in driver attitude for either experimental or control group?
3. Does driver knowledge as measured by an achievement test change significantly as a result of either experimental or present method training?
4. Is there a greater significant change in driver knowledge for either experimental or control group?
5. Does driving ability, as measured by the Ætna road test, develop significantly for either experimental or control group?
6. Is there a significant difference in driving ability growth between the experimental and control groups as measured on the Ætna road test?
7. Is the terminal driving ability of students trained with the experimental device significantly different from the terminal driving ability of students trained with present methods, as measured by an on-the-road test?
8. How many more students with comparable terminating driving ability can be trained with the Ætna Drivotrainer in 1 year than can be trained with present methods in 1 year?
9. Can the per pupil cost for driver training be appreciably reduced with the use of the Ætna Drivotrainer?

CHAPTER IV. METHODS AND PROCEDURES

Chapter IV is descriptive, its purpose is to present the organization of personnel for coordinating the study by the Los Angeles City Board of Education and the Ætna Casualty & Surety Co. The design of the study is set forth in terms of selecting teaching personnel, selecting student control groups and student experimental groups. A description of the evaluation instruments is included with the program for testing. Finally, chapter IV presents the basic pattern to be used in the statistical analysis of the data gathered.

A. Organization

1. *Personnel.*—In order to facilitate and expedite the flow of materials, supplies, and information for the operation of the experiment, it was necessary to select key personnel. Mr. Stanley F. Withe, secretary; Mr. Donald M. Johnson, west coast representative; and Mr. Paul Cullen, superintendent, were selected by the Ætna Casualty & Surety Co. as their liaison representatives. They also employed the A. F. Milliron Co., of Los Angeles, to maintain and repair the Ætna Drivotrainer and related equipment.

The Los Angeles City Board of Education appointed Mr. Cecil G. Zaun, supervisor of safety, to direct all experimental activities. He chose Mr. Robert S. Lewis, coordinator of driver education, as his liaison representative; Dr. Walter G. Patterson, in charge of conducting the experiment and coinstuctor of the experimental group; Mr. Louis I. Bernoff, as assistant to Dr. Patterson and coinstructor of the experimental group. Mr. Robert S. Long, Mr. Merrill P. Konish, and Mr. Frank G. Yeoman were chosen as instructors of the control group.

The following members of the safety section staff volunteered their assistance in administering the final skill and road tests: Mr. Melvin T. Schroeder, supervisor, driver instruction; Mr. Warren M. Epinette, coordinator of driver training; Mr. Eldred H. Marlatt, consultant; Mr. Lester L. Wasserburger, consultant; and Mr. Clifford C. Francom, instructor.

The California Department of Motor Vehicles supplied license examiners to assist in rating and scoring the students on the road test.

2. *Schools.*—A survey of the Los Angeles City high schools revealed a shortage of classroom space. This greatly narrowed the choice of schools. When Mr. Harold Perry, principal, was consulted regarding the possible use of Hollywood High School, he made available a classroom, the facilities of the plant, as well as the neccessary administrative cooperation.

The student body of Hollywood High School was not large enough to supply a sufficient number of students for the experiment. Therefore, it was necessary to include another school to augment the control group. John Marshall High School was selected because of the close similarity of its (*a*) educational standards, (*b*) available training area, (*c*) surrounding terrain and traffic conditions, (*d*) students' average intelligence quotient, and (*e*) proximity to Hollywood High School.

B. Design

1. *Selection of teaching personnel.*—The instructors chosen for the experiment were all fully qualified on the basis of professional training and experience. Dr. Patterson, Mr. Bernoff, Mr. Long, Mr. Konish, and Mr. Yeoman were chosen because it was felt that their instruction would be equally satisfactory. To insure uniformity of instruction, lesson plans were formulated, mimeographed, and made available to both control and experimental instructors and students.

2. *Size of the groups.*—To determine the largest number of students who could be trained in one semester the following factors were considered:

(*a*) One training car and one full-time instructor were available for each school to train the control group.

(*b*) One training car and two full-time instructors were available for the experimental group.

(*c*) Ninety-three teaching days were available for the experiment.

(*d*) Neither the experimental nor control group was to continue training over the 5-day vacation period preceding Easter.

(*e*) The Ætna Drivotrainer was to be in use five periods per day for the maximum number of days possible.

(*f*) The control group was to receive 6 class hours of behind-the-wheel training.

(*g*) The experimental group was to receive 3 class hours of behind-the-wheel training.

(*h*) The experimental group was to receive not less than 12 nor more than 20 class hours in the Ætna Drivotrainer.

It was found that if 3 students were taken at 1 time in the dual-control car, and 16 class hours were spent in the Drivotrainer, 120 was the optimum number of students that could be trained with the Ætna Drivotrainer in the available time. With these conditions, 60 control students could be trained with 1 dual-control car. By having Marshall High School training 60 students, the control and experimental groups were numerically equated.

4. *Selection of students.*—Students were selected for training on the basis of four criteria. These conditions were:

(*a*) That the student be at least 15 years and 6 months of age at the time he began his training.

(*b*) That the student shall have taken or be taking a course in driver education at the time he began training.

(*c*) That the student shall have had no driving experience at the time he began his training.

(*d*) That the student could be enrolled from a study hall.

5. *Selection of test materials.*—

(*a*) Siebrecht attitude scale, appendix A of complete study: This attitude scale is a self-determining test of 40 items. The following excerpts from the manual of directions are pertinent:

"* * * designed to measure attitude toward the safe driving of an automobile.

"By the split-half method a reliability of 0.81 plus 0.02 P. E. has been secured on a group of 100 students enrolled in driver-training courses. The validity of

the scale rests upon * * * the judgment of experts in traffic safety and attitude measurement * * * a 20-percent segment of the extremes was used. For none of the statements is the critical ratio of the difference between the means of the 20-percent segments less than 3.00. The average ratio is 6.234." [2]

"(*b*) Achievement test in driver education for Man and the Motor Car, fifth edition, appendix D of complete study: The test known as the Man and the Motor Car test was also administered. This self-administered test is a 100-item test composed of 60 true-or-false items, 30 multiple-choice items, and 10 matching items. It covers material contained in the book, Man and the Motor Car.

(*c*) Achievement test in driver education for sportsmanlike driving, appendix D [3] of complete study: This final examination for the second edition of Sportsmanlike Driving is a 50-item, multiple-choice, self-administered test. Test Form 5A was used for this examination.

(*d*) The Ætna road tests: These tests are on film, and the student responses are automatically scored at the control tower, figure 5, page 21, of the complete study.

(*e*) On-the-road test: A route was selected in the area near Hollywood High School which included right and left turns, traffic, pedestrian situations, up- and down-hill parking, as well as a U turn, course, appendix E of complete study. Each student was scored by a member of the driver-instruction staff of the safety section, Los Angeles city schools, and an operator's license examiner from the California Department of Motor Vehicles, rating sheet, appendix F of the complete study. The purpose of this test was to determine the ability of the student to control the car safely under actual driving conditions.

(*f*) Skill tests: Offset-alley and parallel-parking tests were taken from exercises 2 and 5 of checklists and score sheet for exercises in driving skill, appendix G of the complete study. These tests were an attempt to measure the students on two driving skills. The courses for the test were outlined on a section of the athletic field. The tests were chosen because the offset alley represented a driving situation in which the students had not been trained, while parallel parking represented a situation for which the students had been trained. There was insufficient time to administer other skill tests.

C. Conducting the study

The experiment was carried out in three stages: (1) A pretesting program, (2) an instructional program, and (3) a post-testing program.

1. *Pretesting program.*—All participating students were given three paper-and-pencil tests, the Siebrecht attitude scale, Man and the Motor Car test, and the Sportsmanlike Driving test. The first section of the original Ætna final road test was also administered to determine if the students had any driving ability.

2. *The instructional program.*—(*a*) To assure that instructors in both the experimental and control groups would cover the same amount of material in the same sequence, with the same procedures and techniques, the following measures were taken:

(1) As a result of several conferences of the instructors and the safety section staff, a detailed course of study based on the California State guide [4] was prepared which included the scope and sequence of material, with special emphasis on methods and techniques.

(2) Detailed outlines of instructions for each lesson, based on the course of study, were prepared and issued to the students at appropriate times in their respective training periods. Test questions were provided with each lesson, appendix H of the complete study.

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[2] Manual of Directions, Siebrecht Attitude Scale, appendix B of complete study.
[3] American Automobile Association, Sportsmanlike Driving, Washington, D. C., American Automobile Association, 1947.
[4] Driver Instruction, a Guide for Driver Education and Driver Training, California State Department of Education, Sacramento, 1953.

(*b*) Schedule of instruction: Appendix I of the complete study presents the 2 schedules which provided 6 class hours of behind-the-wheel instruction and 12 class hours of observation for each member of the control group. These schedules also provided for 16 class hours of instruction in the Ætna Drivotrainer, 3 class hours of behind-the-wheel training, and 6 class hours of observation for the experimental group.

3. *The post-testing program.*—The subgroups were given the on-the-road test the day after completing their training. Each student was tested individually with a dual-control car accompanied by a staff member of the safety section and a license examiner of the California State Department of Motor Vehicles, both of whom scored the student. The skill tests followed the road test by 1 day. The third, fourth, and fifth days following the completion of training, the Siebrecht attitude scale, Man and the Motor Car test, Sportsmanlike Driving test, and the new Ætna final road test were administered. In order to obtain student evaluation of the Ætna Drivotrainer, each student of the experimental group answered a check list questionnaire prepared by members of the Ætna Casualty & Surety Co., appendix J, included in this summary.

D. Analyzing the study

Following are the methods used in (1) determining the groups for analysis, (2) comparing the groups, and (3) statistical analysis.

1. *Determining the groups of analysis.*—Only students who had completed both the training, as well as all pre and post tests, with the exception of the skill tests, were included in the final analysis.

Observations established that the skill-test scoring was not adequately organized for these students. The scores could not be translated into a statistically usable index. A clerical error invalidated a number of the scores.

During the period of the pre and post tests, the recording mechanism failed on several occasions to function properly. It was necessary to eliminate the test results of the students involved. Consequently, these students were omitted from the final analysis.

The final groups were composed of 68 experimental and 75 control students.

2. *Comparing groups.*—To determine the extent to which the groups were equated, they were statistically compared as to grade placements, numerical size, and sex, table 2; age and I. Q., table 3; grade level, table 4; and previous driving experience, table 5.[5]

These comparisons indicated that there was no significant difference between the groups for any of these measures, with one exception. There appeared to be a significantly larger proportion of experimental 11A's than might be expected to occur by chance alone.

CHAPTER V. COMPARISON OF THE GROUPS

Summary

This chapter revealed that the two groups were comparable, as measured by the pretests. With the exception of the Ætna road test, there was no significant difference, at or beyond the 5-percent level, between the 2 groups, as measured by the post tests.

The experimental groups showed signficant improvement on all test scores. The control group showed significant improvement on all test scores with the exception of the Siebrecht attitude scale.

The differences in change on the Siebrecht attitude scale and the Ætna road test were significantly greater for the experimental group. The 2 achievement tests showed no significant difference in change between the 2 groups.

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[5] Tables 1, 2, 3, 4, and 5 have not been included in this summary. Refer to the complete report as prepared by the Los Angeles city schools.

TABLE VI.—*Significance of the difference in mean pretest scores between experimental and control groups as measured by "t" ratios*

Pretest	Experimental mean	Control mean	Difference of mean	t [1]	P [2]	Difference in favor of
Siebrecht attitude	161.8	162.7	0.9	0.35	0.73	Not significant.
Man and motorcar	66.1	67.2	1.1	.74	.46	Do.
Sportsmanlike driving	32.3	33.2	.9	.74	.46	Do.
Etna road test	33.6	35.3	1.7	1.20	.25	Do.

[1] In order to indicate the 5-percent level of confidence t must equal at least 1.96. The term "5-percent level of confidence" indicates that the chances are 95 out of 100 that any differences found to exist between the 2 training methods are real differences and not due to chance.
[2] P Represents the level of confidence.

TABLE VII.—*Significance of the differences in mean posttest scores between experimental and control groups as measured by "t" ratios*

Posttest	Experimental mean	Control mean	Difference of mean	t [1]	P [2]	Difference in favor of
Siebrecht attitude	168.1	164.5	3.6	1.36	0.17	Not significant.
Man and motor car	69.7	69.5	.2	.14	.80	Do.
Sportsmanlike driving	36.28	36.29	.01	.01	.99	Do.
Aetna final road test	53.2	47.3	5.9	4.60	.00001	Experimental.
Road test [3]	200.4	178.8	21.6	1.24	.22	Not significant.

[1] In order to indicate the 5-percent level of confidence t must equal at least 1.96. The term "5-percent level of confidence" indicates that the chances are 95 out of 100 that any differences found to exist between the 2 training methods are real differences and not due to chance.
[2] Represents the level of confidence.
[3] A lower score indicates better performance.

TABLE VIII.—*Significance of the differences in mean changes of test scores between the experimental and control groups as measured by "t" ratios*

	Experimental means					Control means					Mean changes				
	Pre	Post	Difference [1]	t	P.	Pre	Post	Difference [1]	t	P.	Exp.	Con.	Difference [2]	t	P.
Siebrecht attitude	161.82	168.05	+6.23	5.15	<.001	162.70	164.49	+1.79	1.34	.18	6.23	+1.79	+4.44	2.47	<.02
Sportsmanlike driving	32.32	36.28	+3.96	6.60	<.001	33.20	36.29	+3.09	2.55	.01	3.96	+3.09	+.87	.64	.52
Man and the motorcar	66.07	69.71	+3.64	4.49	<.001	67.21	69.48	+2.27	2.06	.04	3.64	+2.27	+1.37	1.00	.30
Etna road test	33.56	53.18	+19.62	20.44	<.001	35.32	47.29	+11.97	21.76	<.001	19.62	+11.97	+7.65	6.83	<.001

[1] Post minus Pre.

[2] Experimental minus Con.

CHAPTER VI. COMPARISON OF COSTS

Chapter VI is devoted to an analysis of per pupil costs involved in three methods of offering behind-the-wheel practice driving.

The first method involves the use of 8 Ætna Drivotrainer cars in a 15-class-hour presentation combined with 3 class hours of actual behind-the-wheel practice driving.

The second method involves the use of 15 Drivotrainers. Otherwise, the program would be the same as for the 8 Drivotrainers referred to above.

The third method is that prescribed as a minimum program by the California State department of education; namely, 6 class hours of behind-the-wheel practice driving and 6 hours of observation in a dual-control automobile.

A summary of the possible savings concludes the chapter.

Justification for these comparisons, based on the evidence of this study, rests on the premise that the experimental group students trained on the Ætna Drivotrainer appeared to have been just as competent drivers as the control group students trained by present methods.

Any proposal program must be based on the experimental program since there is no evidence as yet that other programs have produced drivers of equal or greater competency.

A. Drivotrainer program

1. 8 Ætna cars, 15 hours per student:	
(*a*) Teacher's salary (annual average)	$4,800.00
(*b*) Amortized cost per year (based on amortizing original cost over a 10-year period)	1,365.00
(*c*) Maintenance costs per year	300.00
Total annual Ætna Drivotrainer costs	6,465.00
(*d*) Cost per pupil for Ætna Drivotrainer (480 trained annually)	13.47
(*e*) Cost per pupil for 3 hours of behind-the-wheel practice driving (based on present methods cost in Los Angeles City schools—see section B)	19.64
Total per pupil cost per combined training	33.11
2. 15 Ætna cars, 15 hours per sudent:	
(*a*) Teacher's salary (average annual)	4,800.00
(*b*) Amortized cost per year (based on 10-year life)	1,995.00
(*c*) Maintenance costs per year	400.00
Total annual Ætna Drivotrainer costs	7,195.00
(*d*) Cost per pupil for Ætna Drivotrainer (900 trained annually)	7.99
(*e*) Cost per pupil for 3 hours of behind-the-wheel training	19.64
Total per pupil cost for combined training	27.63

B. Present methods (6 class hours behind the wheel)

1. Teacher's salary (average, annual)	$4,800.00
2. Annual cost of dual-control car (operation, maintenance amortization, insurance, etc.)	700.00
Total annual costs to train 140 students	5,500.00
Total per pupil costs	39.28

C. Savings

1. 8 Ætna cars per classroom compared with present methods:	
(*a*) Present methods costs per pupil	$39.28
(*b*) Ætna Drivotrainer methods costs per pupil	32.11
(*c*) Savings per pupil	6.17
(*d*) Savings per 1,000 pupils	6,170.00

2. 15 Ætna cars per classroom compared with present methods:

(*a*) Present methods cost per pupil	39.28
(*b*) Ætna Drivotrainer methods cost per pupil	27.63
(*c*) Savings per pupil	11.65
(*d*) Savings per 1,000 pupils	11,650.00

Summary

On the basis of estimated costs, the savings when using an 8-place Drivotrainer following the experimental program would be over $6,000 per 1,000 pupils trained. If a 15-place machine were used and the experimental program were followed a savings of nearly $12,000 per 1,000 pupils trained, would be realized. The costs involved in teacher-retirement programs have not been included in this study.

CHAPTER VII. CONCLUSIONS AND RECOMMENDATIONS

Chapter VII sets forth the conclusions for this study. It develops recommendations for further research drawn from the experiences of this study. It is the purpose of the chapter to present the opinion of the staff with regard to: (1) the limitations of this study and (2) an awareness of the potential of the Ætna Drivotrainer as a training aid.

A. Conclusions

1. Results indicate that practically the same progress in driving skill and knowledge will be experienced by a student trained by either the experimental method using the Ætna Drivotrainer plus 3 hours of on-the-road training, or the California State prescribed course.

2. While increment in driver knowledge as measured by the final tests for sportsmanlike driving and man and the motorcar tests was observed, there was no evidence that either the control or the experimental group established a statistically significant advantage.

3. Statistically, driver attitudes, as measured by the Siebrecht attitude scale, changed significantly for the experimental group as contrasted to no significant change by the control group. Educationally, this may have import for teaching methodology and for the Ætna Drivotrainer course.

4. Both groups made significant improvement in driving ability as measured by the Ætna road test. The experimental group showed significantly greater improvement. Familiarity with the machine may have influenced the results in this instance.

5. There is a very slight indication of possible difference in driving ability, as measured by the road test, in favor of the control group. However, the level of significance for this difference was not great enough to warrant unqualified acceptance.

6. The costs chapter indicates that, based on a program of 15 class hours in the Ætna Drivotrainer and 3 class hours in the car, 480 students can be trained in 1 year with an 8-place Drivotrainer at a saving of approximately $6.17 per student. The same program with a 15-place Drivotrainer would realize a saving of $11.65 per student as compared with the cost of the conventional 6-class hour program in Los Angeles.

7. From replies to the student evaluation questionnaire by 113 pupils in the experimental group, it appears that: (1) the Ætna Drivotrainer definitely helped them to learn to drive; (2) the films were clear and easy to understand; (3) they thought the Ætna Drivotrainer was somewhat like driving a real car; (4) they believed that the Ætna Drivotrainer helped to prepare them for on-the-road situations; (5) they would definitely recommend the Ætna Drivotrainer course to their friends and classmates; and (6) 50 students recommended fewer periods of training in the Ætna Drivotrainer and more on-the-road training, while 49 students recommended more of each type of training.

The reactions of the Hollywood High School students, appendix J, proved similar in many respects to those cited from a New York study conducted by Dr. J. Wayne Wrightstone.[8]

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[8] Wrightstone, J. Wayne, George Forlano, and Richard J. O'Connor, Interim Report on the Evaluation of the Ætna Drivotrainer, Board of Education, New York City, 1953.

This evaluation, by the Los Angeles City schools, has approached one facet of the Ætna Drivotrainer's many possibilities. Its scope has been necessarily limited by the nature of the basic problem as stated. The study has contributed to professional growth of the research staff in that there is a greater awareness of the infinite scope of the contribution which the Ætna Drivotrainer may make to the field of driver education. With a clearer understanding of this potential there also has developed a better understanding of the research problems yet to be undertaken in realizing the maximum benefit from the Ætna Drivotrainer.

APPENDIX J

A SUMMARY OF 112 STUDENT REPLIES

LOS ANGELES CITY SCHOOLS—SAFETY SECTION

STUDENT EVALUATION OF DRIVOTRAINER

I. Check those ways in which you believe the Drivotrainer helped you learn to drive:

86 ( ) Learning gear shifting.
79 ( ) Learning control of clutch.
59 ( ) Learning proper steering.
58 ( ) Learning proper use of accelerator.
68 ( ) Learning proper use of brake.
94 ( ) Learning proper use of signals.
85 ( ) Learning safety practices.
85 ( ) Learning general control of car.

II. Check those ways in which you believe the Drivotrainer hindered you in learning to drive:

5 ( ) Learning gear shifting.
21 ( ) Learning control of clutch.
21 ( ) Learning proper steering.
15 ( ) Learning proper use of accelerator.
18 ( ) Learning proper use of brake.
5 ( ) Learning proper use of signals.
3 ( ) Learning safety practices.
7 ( ) Learning general control of car.
54 ( ) No sensation of actual movement.
43 ( ) No hindrances.

III. Check three major factors needed to become a safe driver that the drivotrainer helped you to learn:

63 ( ) Alertness, awareness of pedestrians and other drivers.
41 ( ) Sportsmanship, courtesy and consideration.
21 ( ) Braking.
24 ( ) Signalling.
37 ( ) Shifting.
32 ( ) Use of clutch.
36 ( ) Control of car.
9 ( ) Use of accelerator.
15 ( ) Steering.
39 ( ) Obedience to traffic rules and laws.
12 ( ) Control of speed.
19 ( ) How to make turns.
12 ( ) Distance judgment.
30 ( ) Self-confidence.

IV. Check three major factors needed to become a safe driver that actual "on-the-road" experience helped you to learn:

78 ( ) Alertness, awareness of pedestrians and other drivers.
36 ( ) Sportsmanship, courtesy and consideration.
28 ( ) Braking.
17 ( ) Signalling.
19 ( ) Shifting.
49 ( ) Use of clutch.

72 ( ) Control of car.
6 ( ) Use of accelerator.
16 ( ) Steering.
19 ( ) Obedience to traffic rules and laws.
11 ( ) Control of speed.
12 ( ) How to make turns.
15 ( ) Distance judgment.
17 ( ) Self-confidence.

V. Did the Drivotrainer help you to learn to drive?

110 ( ) Yes 2 ( ) No

VI. Did you find the Drivotrainer films clear and easy to understand?

95 ( ) Yes 17 ( ) No

VII. How much do you think driving in the Drivotrainer was like driving a real car?

21 ( ) Much
89 ( ) Some
2 ( ) Not at all

VIII. Do you believe that the Drivotrainer helped to prepare you for the situations you met on the road?

107 ( ) Yes 4 ( ) No

IX. Do you consider valuable the training given you in the Drivotrainer on how to meet emergency situations on the highway?

101 ( ) Yes 10 ( ) No

X. Would you recommend the Drivotrainer course to your friends and classmates as a means of making them better, safer drivers?

108 ( ) Yes 3 ( ) No

XI. What would you recommend that future classes be given?

2 ( ) More periods on the Drivotrainer and fewer on-the-road.
50 ( ) Fewer periods on the Drivotrainer and more on-the-road.
16 ( ) The same number of periods as now.
49 ( ) More periods of each.
1 ( ) Fewer periods of each.

Mr. CULLEN. Thank you.

Los Angeles has the largest driver-training program of any city in the country, and Iowa State Teachers College is one of the leading institutions for the training of high-school, driver-education teachers.

The conclusions reached independently in both these studies were identical: Both reported that Drivotrainer instruction could be substituted for 3 of 6 hours of instruction in a dual-control car, not only with no loss whatsoever in the quality of the instruction but with certain important gains in quality, and at great savings in cost.

To conserve time, I will not go into the details of these evaluations, but I would be glad to answer any questions you may have about them. I would like to say, however, that the Iowa report speaks of a 15-place Drivotrainer making it possible for 1 instructor to reach half again as many students as he could using the dual-control-only method of instruction, while the Los Angeles report speaks of a potential per-pupil saving of $11.65, or $10,500 per year, in the training of 900 pupils, which is the capacity of a 15-place Drivotrainer.

So much for the economy aspects of the Drivotrainer.

I spoke earlier of a second purpose of the Drivotrainer, and other training devices, to give training that cannot be given in the real thing due to hazards or practical difficulties involved.

Safety authorities agree that the purpose of driver training is not simply training in skills; it is training in good attitudes, good judg-

ment, and what to do in emergency situations. Through the Drivotrainer motion pictures, we stage situations designed to accomplish these purposes, and we subject all the students to these situations. Remember, the Drivotrainer films, for the most part, are taken from a moving car and represent a driver's-eye view of the road. Here are a few typical attitude-building situations from these films:

1. The road is narrowed by parked cars on each side of the street. Just as the Drivotrainer students approach this bottleneck, an oncoming car appears. The students pull over to the right and slow, giving the other fellow the right-of-way.

2. When turning at an intersection, they stop and allow a pedestrian to cross, giving him the right-of-way.

3. They are taught not to depend on a green light, but to look both ways at intersections. An "actor car," running the red light, punches home the importance of this lesson. If they had crossed without looking, they would have had an accident.

4. When passing children playing on the sidewalk, the Drivotrainer students are taught to lift their foot from the accelerator and cover the brake in case they have to make a sudden stop.

5. Several films are devoted to defensive driving and emergencies—how to avoid potentially dangerous situations; what to do in common emergencies caused by the carelessness of another driver.

Are students who have been given this type of training, which is so similar to that given airline pilots on flight simulators, better, safer drivers than students who have been trained by the dual-controlled-only method? We think so, and offer this evidence:

1. In the Los Angeles study, the Drivotrainer students showed a much greater gain in courtesy, consideration, and good attitudes, as measured by the Siebrecht attitude scale, than students who just had dual-control instruction.

2. A questionnaire distributed by the Bureau of Educational Research of the New York Board of Education to teachers in New York and other cities using the Drivotrainer showed a consensus that the Drivotrainer was superior to dual-control instruction in these four areas:

(*a*) Teaching wholesome driver safety habits.
(*b*) Teaching practical judgment in traffic situations.
(*c*) Developing good attitudes.
(*d*) Developing good judgment in emergency situations.

Here are a few comments from the teachers responding to this questionnaire sent out by the New York board:

It would be a brave and foolhardy instructor, indeed, who would attempt to give on the road the emergency training that the Drivotrainer makes possible.

* * * * * * *

I think the Drivotrainer films provide more traffic situations in a given time than we would be likely to find on the street day after day.

Part of my job has involved visiting Drivotrainer installations in all sections of the country, and I can honestly say that I have yet to talk to a Drivotrainer teacher who is not wholehearted in his enthusiasm for the device.

May I illustrate:

1. Bert Woodcock, director of safety education, Iowa State Teachers College, writes:

* * * we have shown the elementary Drivotrainer films to our classes and, after less than 1 hour's experience on the Drivotrainer, these youngsters have been able to get in the dual-control car and operate it with surprising proficiency. In 17 years' experience in the driver-training field, I have not seen students progress so rapidly. * * * As far as emergency training is concerned, one of our teachers had an experience just the other day of rounding a corner and finding a car coming at them head on in the wrong lane. The young girl driving the school car reacted instantaneously, automatically, and correctly. As it happened, this situation was one she had practiced many times on the Drivotrainer.

2. Dr. Richard Kaywood, a teacher at Anaheim, Calif., has written an article about the Drivotrainer from which I quote:

No single teaching device in recent years has created as much of a stir among educators and citizens generally as the Ætna Drivotrainer. Before the advent of the Drivotrainer the major portion of dual-control instruction was largely focused on manipulative skills, with a view toward preparing the student for the department of motor vehicles licensing examination. This concentration on manipulative skills often interferred with realization of such important objectives as the development of social attitudes toward driving and the ability to make and execute proper decisions in accordance with the needs of changing and complicated traffic patterns. Few teachers felt that adequate time was devoted to these objectives. At precisely this point the Drivotrainer makes its greatest contribution toward the effective preparation of young drivers. * * * The Drivotrainer makes it possible to teach more students with fewer teachers and dual-control cars, at less expense, and to do a better job of instruction as well. Upon such teaching devices rests the continued development of driver education and training throughout the country, and very likely, the lives, happiness, and economic welfare of millions of people.

3. Richard A. Meyerhoff, driver training instructor at East and West High Schools in Waterloo, Iowa, writes:

We feel that we have made a giant stride this year in the improvement of our program. We have taught twice as many people with the same instructors and have done a much better job than we have ever done before .* * * with the Drivotrainer, the students come to the car with a "built-in" behavior which makes it a pleasure to ride with them * * * the attitude of the students is more serious than in the past * * * my personal health is much better because riding with the students now is a pleasure instead of a series of anxieties * * * I would not accept a position in driver training anywhere else unless they, too, had the Drivotrainer. I know I couldn't possibly duplicate what the Ætna Drivotrainer does for a student.

4. Dr. Walter G. Patterson, a teacher at Reseda High School in Los Angeles, writes:

A. The Drivotrainer enables the pupil to practice, in the safety of the classroom, the latest and best techniques of driving, including the handling of the car in traffic situations which cannot even be demonstrated in the dual-control car. In addition it furnishes specific training in the development of proper attitudes.

B. Perhaps the most important advantage of the Drivotrainer is that of financial savings, since the reduced per pupil cost will make school boards willing to provide training for more students.

5. Dr. James H. Hall, public-school safety officer at Springfield, Mo., reports:

I can think of nothing which will contribute more to the reduction of street and highway accidents through our Nation than to provide required driver edu-

cation of all high-school students. The old saying of "we can't afford it" no longer holds water. The fact is, we can no longer afford not to and the Drivotrainer has placed the cost of this program on an equal basis with that of other laboratory classes offered in our curriculum.

May I take the liberty of submitting for the record Dr. Kaywood's article and these letters I have cited, as well as those from several other driver-education teachers.

Mr. ROBERTS. Without objection, that may be done.

(The documents referred to follow:)

NOT JUST A SUBSTITUTE AUTOMOBILE

Richard Kaywood, Ed. D., driver education instructor, Anaheim Union High School, Anaheim, Calif.

No single teaching device in recent years has created as much of a stir among educators and citizens generally as the Ætna Drivotrainer for the teaching of driving in secondary schools. Ever since the tremendous expansion of motor-vehicle registration at the end of World War II and the accompanying slaughter on the highways, particularly among young drivers, public attention has been focused on the need for education as the best means of controlling the problem. In the past 10 years no other course of instruction has grown so rapidly in the high schools of this country as has driver education and training. No other course of instruction has achieved such public acceptance in so short a time, in spite of the fact that this was among the more expensive programs in the curriculum. Little wonder, then, that the Drivotrainer, designed to reduce the cost and to improve instruction, has captured the imagination of teachers, administrators, and the public at large.

The Ætna Drivotrainer, developed over a period of 20 years by the Ætna Life Affiliated Co., of Hartford, Conn., consists essentially of 3 main components: A number of small Ætnacars equipped with controls similar to those of a modern automobile; a master control unit connected electrically to each Ætnacar so that all movements of the controls by each student can be permanently recorded and reviewed; and a number of films especially prepared for this instructional program. The latest model Ætnacar features both standard and pushbutton automatic transmission operation, thereby overcoming one of the limitations of earlier models. Most films are self-contained units which include instructional and testing elements for various driving skills and techniques.

Normal class procedure calls for a brief orientation and explanation of the lesson to follow, operation of the Ætnacar by each student while the film is shown, discussion of essential skills emphasized in the film and their relationship to traffic situations, a review of the same film for testing purposes, and an evaluation of individual student performance as indicated by the record. The series of films carries the student in easy stages from the fundamentals of shifting gears and use of automatic transmission to the final road test similar to, but probably more comprehensive than, that encountered by the applicant for an operator's license in most States. Throughout the lesson the instructor can check on or monitor the actions of each student as they occur, even so far as to know the extent to which the accelerator, brake pedal, and clutch pedal have been depressed. A review of the testing record of each film points up both major driving errors as well as recurrent mistakes of a minor nature. Such common faults as riding the clutch, fast starts and hard braking at traffic signals, and improper downshifting can readily be observed, and steps taken to eliminate them from the developing driving habits of students.

In most programs the student alternates between Drivotrainer and dual-control car every day or every 2 days for a cumulative total of 15 hours in the Drivotrainer and 3 hours behind the wheel, thus putting into actual practice the skills and techniques learned in the class. According to the Los Angeles study, the time spent behind the wheel under this arrangement can be cut from 6 hours to 3 hours without reducing the level of driving performance expected of student in the traditional program in which only the dual-control car is used.

During the past few years articles in national periodicals and local newspapers have publicized the Drivotrainer program as it was introduced into high schools around the country. Some enthusiastic reporters, after one brief encounter with the Drivotrainer, exuberantly proclaimed that here at last was the answer to the high cost of driver instruction. Here was a way to teach as many as 15 students

at 1 time to drive an automobile without even leaving the classroom. Here was the solution to teacher shortages, risks of traffic hazards, lack of dual-control cars. Here, in short, was a device that would pave the way for necessary instruction of a high standard for the increasing numbers of students now in secondary schools and for the many more soon to follow.

This optimistic view received a strange reception among those most interested in and familiar with the driver-training program—the teachers. For the most part, they felt the need for more information, being unwilling to endorse a new device on the basis of newspaper reports or the casual viewing of films. The very newness of the program and the limited number of installations retarded the availability of firsthand observation of classes in action. On the other hand, some teachers were anxious to accept the Drivotrainer even before results of the Los Angeles study were reported, convinced that the device had tremendous potential for achieving the objectives of its designers. Others, either through fear of being displaced by a machine, or perhaps unable to accept the implication that their current efforts in teaching young drivers might be improved upon, dismissed the whole idea as unworthy of consideration. Still others, frequently after a single exposure to a demonstration of the Drivotrainer at some educational conference where actual teaching situations were not feasible, came away impressed with its resemblance to a real automobile, but disappointed at its immobility and other structural limitations, and unable to accept it as an advancement in the teaching of driving until these "difficulties" had been resolved.

Numerous discussions in this connection disclosed a basic fallacy in the thinking of all four groups regarding the purpose and function of the Drivotrainer in the teaching of driving. It was only natural to examine the operation and outcome of the Drivotrainer strictly in terms of the dual-control-car program it partially replaced. Evaluation of the new program was being made according to standards accepted for the traditional program, without any realization that such standards might well be limited in scope, restricted in perspective, and not necessarily applicable in toto to the Drivotrainer. In short, the Drivotrainer was being considered a miniature or substitute automobile, and the product of the Drivotrainer judged according to the same criteria as that of the dual-control car. At no time did it occur to these teachers that the Drivotrainer was capable of doing a somewhat different job than the dual-control car alone, and that the results of the combined program might be far better, although different, than those obtained in the earlier program.

No one will disagree that the Ætnacar, in spite of its outstanding design and intensive engineering development, does not provide the same "feel" of driving as a real car. The sense of movement cannot easily be built into a stationary object. Complaints that application of the accelerator or brake does not produce reactions exactly like those expected on the road, or that the visual angle produced by the camera are significantly restricted, are valid only when the Ætnacar is being compared with a real automobile. However, when the sights are raised to the greater potential of the Drivotrainer, these complaints become relatively unimportant. The point to remember is that the Ætnacar is a teaching device, not a substitute automobile. In the final analysis, the Drivotrainer program must be evaluated in terms of results produced, rather than how closely it resembles a real motor vehicle.

Before the advent of the Drivotrainer, the major portion of dual-control instruction was largely focused on manipulative skills, with a view toward preparing the student for the department of motor vehicles licensing examination. While attitudes, understandings, and judgments certainly were not overlooked, these frequently received proportionally less emphasis since each student was allotted so little time behind the wheel, and, of necessity, needed to devote his attention to clutch-brake coordinations and the shifting of gears in traffic. There was always the possibility of making a costly mistake, or of being the victim of some other driver's mistake. This concentration on manipulative skills often interfered with realization of such important objectives as the development of social attitudes toward driving and the ability to make and execute proper decisions in accordance with the needs of changing and complicated traffic patterns. Few teachers felt that adequate time was devoted to these objectives. It was only when the student acquired sufficient confidence in his ability to handle the car that he could free himself to cope with the greater problems of other drivers on the road. It is here that real driving begins.

At precisely this point, the Drivotrainer makes its greatest contribution toward the effective preparation of young drivers. It is, likewise, here that one must view objectively the relative merits of the two programs and appreciate the

significant difference between the two. For, while the student in the Ætnacar does not exactly get the same "feeling" as we would in a real car, he does experience, through the medium of films and this teaching device, so many more opportunities for making and acting upon decisions in an endless variety of traffic conditions impossible to duplicate in the traditional dual-control-car program. Control of traffic conditions through the use of films simplifies learning, facilitating student attention to fundamental skills and the development of critical judgments without the distractions of other vehicles and pedestrians competing for the same road. Moreover, it is possible for the instructor to check the responses of each student in each situation, to analyze those responses, and to help the student draw the proper conclusions on the basis of conditions presented. The next step so essential to good teaching, which frequently must be left to chance in the dual-control car, is the repetition of the same set of traffic conditions—the film—and the opportunity for each student to check his responses in the light of new insights and understandings just gained. This is especially important when "driving" in heavy city traffic, on the highway or freeway, and when meeting emergency traffic situations.

Several films, for example, prepare the student for "defensive driving," and present many emergency and dangerous conditions frequently encountered in the course of a day's drive. Motorists up ahead of the student's car make turns from a parked position at the curb, and cut across his path at an intersection on a red light. A truckdriver jumps out of his vehicle into the student's lane, and another driver opens the door of his parked car on the street side just as the student approaches. Involuntary, audible exclamations attest to the realism with which these scenes are viewed. "Collisions" resulting from improper use of controls in these emergencies cause no damage or injury. On the contrary, they serve the valuable function of preparing the student for real emergencies on the road without subjecting him or the instructor to possible risk of danger.

For the teacher, particularly, these are considerations of highest importance. He is vitally interested in any device, technique, or method which facilitates learning, increases efficiency, and motivates young people to develop the skills, understandings, and attitudes so necessary for purposeful and adventuresome living in our modern, motorized economy. For the administrator and taxpayer, these matters are likewise important. But so is the matter of reduced cost of an otherwise expensive instructional program. The Drivotrainer makes it possible to teach more students with fewer teachers and dual-control cars, at less expense, and to do a better job of instruction as well. The 2-year study in Los Angeles high schools confirmed the conviction that considerable financial savings were possible with the Drivotrainer. Whereas the traditional 6-hour, dual-control-car program averaged $39.28 per pupil, the new program of 15 hours in the Drivotrainer and 3 hours behind the wheel averaged $27.63 per pupil. Since the 15-place Drivotrainer, along with 3 dual-control cars, can accommodate 900 students a year (running 5 periods a day), the total savings per year can reach $10,485. In such States as California and Michigan, where school districts are reimbursed some of the cost of behind-the-wheel instruction (California returns as much as 75 percent of the school's expenses), this can bring the cost of the program, including the salary of 2 teachers for classroom instruction, to a low of $15,821 a year for 900 students, as compared to an average cost of $14,400 for any other classroom course for the same number of students.

A true evaluation of the Drivotrainer program requires, first, a reappraisal of standards customarily employed in the older dual-control-car program, and the development of new standards consistent with the more extensive capabilities of this new teaching device. Unquestionably, the Drivotrainer cuts the costs of an expensive program, reduces the risks to students and teachers inherent in behind-the-wheel instruction, and simplifies instruction. But the greatest contribution of the Drivotrainer is through improving the quality of instruction, and preparing the student much better than before to drive safely in a motorized society. For the Drivotrainer is not a substitute automobile, but a modern teaching device designed to improve upon the excellent beginnings of the dual-control-car program. Its effectiveness as a teaching device has already been recognized by State departments of education, which accept instruction in the Drivotrainer as the equivalent of 3 hours instruction behind the wheel. The insurance industry has also extended its regular automobile insurance rate credits to students completing the Drivotrainer program. Upon such teaching devices rests the continued development of driver education and training throughout the

country, and, very likely, the lives, happiness, and economic welfare of millions of people.

EXCERPTS OF A LETTER FROM DR. WALTER G. PATTERSON, A TEACHER AT RESEDA HIGH SCHOOL IN LOS ANGELES, CALIF.

The Drivotrainer enables the pupil to practice, in the safety of the classroom, the latest and best techniques of driving, including the handling of the car in traffic situations which cannot even be demonstrated in the dual-control car. In addition, it furnishes specific training in the development of proper attitudes.

It provides the administrator with an opportunity to meet the needs of his pupils by enabling him to present the complete program of both classroom and on-the-road training to all of his students.

Perhaps the most important advantage of the Drivotrainer is that of financial savings, since the reduced per pupil cost will make school boards willing to provide training for more students.

THE SPRINGFIELD PUBLIC SCHOOLS,
Springfield, Mo., June 5, 1957.

Mr. PAUL B. CULLEN,
Ætna Casualty & Surety Co., Hartford, Conn.

DEAR PAUL: As you know, we have offered driver education in our schools for several years on a limited basis. Limited due to the high per pupil cost of the program. Last year, we placed into operation one 15-place Drivotrainer at Parkview High School and to date have been most gratified with its operation.

We have found that the Drivotrainer reduces the cost of our driver education program to a point where we can now provide this necessary training to all of our students. This would not be possible without the Drivotrainer.

Aside from the reduction in our pupil cost, the Drivotrainer has brought to our program many other advantages such as the controlled curriculum as provided in the films. This is an important factor where several instructors are working together for it insures that a specific amount of information will reach each pupil. For the first time, we are able to teach judgment in the use of the vehicle. This was not possible before we began to use the Drivotrainer.

We are so satisfied with the advantages of the Drivotrainer that we have installed a second 15-place unit in our Central High School and have ordered a third unit for installation in the new Hillcrest High School which will open in September 1958.

Thanks to you and all of the fine people at Ætna for their efforts in bringing this excellent audiovisual method of instruction to us. I can think of nothing which will contribute more to the reduction of street and highway accidents through our Nation than to provide required driver education of all high-school students. The old saying of "We can't afford it" no longer holds water. The fact is, we can no longer afford not to and the Drivotrainer has placed the cost of this program on an equal basis with that of other laboratory classes offered in our curriculum.

Sincerely yours,

Jim
JAMES H. HALL,
Public School Safety Officer.

CEDAR FALLS, IOWA, *June 1, 1957.*

Mr. PAUL CULLEN,
Public Education Department,
Ætna Surety & Casualty Co., Hartford, Conn.

DEAR PAUL: We are just completing our first year with the Ætna Drivotrainer here in Waterloo, and I thought you might be interested in a few reactions and observations. We feel that we have made a giant stride this year in the improvement of our program. We have taught twice as many people with the same instructors and have done a much better job than we have ever done before.

Our average test scores on the Iowa drivers license test this year are better than the best were last year. The examiner said that our students "act like they have had more experience" than do the students he tests at other schools.

My personal health is much better than in other years because riding with students now is a pleasure instead of a series of anxieties. It is difficult to believe that many of the students have never driven a car on the street before. Recently while driving in downtown Waterloo with a 16-year-old girl on her first street drive, I was impressed by the correct and immediate response to a lane-change situation. "Where did you learn about changing lanes?" I asked Anna Mae. "In the trainer," she replied. "I never dreamed I could drive downtown. It's just like it is in the Drivotrainer movie." Larry, also taking his first drive on the street, was confronted with a car that made an abrupt lane change into our path. He reacted swiftly and accurately. In other years I would have had to use the brake. With the Ætna Drivotrainer students come out to the car with a "built-in behavior" that makes it a pleasure to ride with them.

I might add that the attitude of the students is more serious than in the past. The experience in the trainers is so intensive that it cultivates the habit of paying attention. With the Drivotrainer we have been able to obtain perfection on signaling with both the hand and with directional lights. I would rate the visual activity and visual efficiency of our students as vastly superior to any we had turned out before. They know what to look for. They know where, how, when and how long to look. To date only 3 of the 670 students have had accidents. They were minor in nature and involved no personal injury.

Many adults and civic leaders have visited our installation and they have been profoundly impressed. They all express the wish that they could have learned to drive with such a wonderful setup. What surprises them most is that we can offer a superior type training for less than half the per student cost involved in the conventional type program. None of the other schools can hope to work in the critical area of driver behavior in an emergency situation. We are able to repeat these situations until we are assured that the student has acquired a predictable desired behavior.

We also teach the driver rehabilitation school for the Iowa Department of Public Safety. The Ætna trainers with flash films of accident situations have generated genuine enthusiasm on the part of the students. We have found these people to be very fast but rather erratic in their reactions to accident situations. I feel confident that we are reaching these people and accomplishing our purpose. Ninety percent of the students leave the school and have no further driving difficulty.

We realize that we are in the early stages of development. The next 5 years should bring wonderful things in the further refinement of teaching techniques, in the films and in the devices themselves.

I feel that the program in Waterloo is one of the best in the Nation. Other schools will be doing in 5 to 10 years what we are doing now. I would not accept a position in driver training anywhere else unless they too had the Drivotrainer. I know that I could not possibly duplicate what the Ætna Drivotrainer does for a student.

Sincerely yours,

RICHARD A. MEYERHOFF,
Driver Training Instructor,
East and West High Schools, Waterloo, Iowa.

IOWA STATE TEACHERS COLLEGE,
DEPARTMENT OF EDUCATION AND PSYCHOLOGY,
Cedar Falls, Iowa, May 29, 1957.

PAUL B. CULLEN,
Superintendent, Public Education Department,
Ætna Casualty & Surety Co., Hartford, Conn.

DEAR PAUL: This June, we will have completed 2½ years' experience with the Ætna Drivotrainer and I thought you might be interested in a few reactions and observations.

You will recall that our research last year conclusively established that Drivotrainer instruction could be substituted for half of the amount of expensive on-the-road time in a dual-control automobile, with results as good or better than that experienced with the conventional course.

Our experience and observations during the last 12 months have served to reinforce our statistical conclusions. There is no doubt in our minds that the Drivotrainer makes it possible to teach such skills as shifting and use of clutch and accelerator faster and better than we were hitherto able to do in a dual-control car.

Over and above this, we can teach groups of skills faster and better. For example, a large number of skills and judgments are involved in parallel parking. This kind of parking has sometimes been termed the most difficult of all driving maneuvers. Yet class after class of our students—high-school youngsters and adults—have gone right out on the road and successfully completed parallel parking manuevers after an hour or less instruction on the Drivotrainer.

In the same vein, we have shown the elementary Drivotrainer films to our classes and after less than 1 hour's experience on the Drivotrainer, these youngsters have been able to get in the dual-control car and operate it with surprising proficiency. In 17 years' experience in the driver-training field, I have not seen students progress so rapidly.

But there is a great deal more to driving than skills. To be a good driver, you must be a safe driver. This involves having the right mental attitude toward driving, and knowing what to do in fast-breaking emergency situations. Through the Drivotrainer and accompanying films, we can subject the students to hundreds of attitude-building situations. The experience of our teachers shows that this pays off. These teachers report that Drivotrainer youngsters in traffic do not commit the unsafe acts which students trained by other methods tend to commit.

As far as emergency training is concerned, the Drivotrainer makes it possible to give the students training which we could not possibly duplicate on the road due to the hazards involved. One Iowa Drivotrainer teacher had an experience just the other day of rounding a sharp corner and finding a car coming head on at him in the wrong lane. The young girl driving the school car reacted instantaneously, automatically, and correctly. As it happened, this situation was one which she had practiced many times on the Drivotrainer.

Here at Iowa State Teachers College, we have given more than 400 student teachers of driver education preliminary familiarization and training on the Drivotrainer. We have also worked closely with the Iowa Public Safety Department in setting up drive-improvement clinics for chronic violators. The Drivotrainer has been a feature of these clinics and has served to dramatize and prove beyond shadow of doubt the errors committed by these poor drivers. Once we can get them to admit their errors, then we can go about showing them how to correct these mistakes.

We are delighted that you accepted the recommendation of the Drivotrainer Curriculum Advisory Committee and decided to produce a film this summer on driving on rural highways. As you know, three times as many fatal accidents occur on rural highways as in the city. We have great need for such a film and we feel that it will help us to cut the present frightening death rate on our country highways.

Sincerely,

BERT WOODCOCK,
Director, Safety Education.

MICHIGAN STATE UNIVERSITY,
June 5, 1957.

MR. PAUL B. CULLEN,
Public Education Department,
Ætna Casualty & Surety Co., Hartford, Conn.

DEAR PAUL: It was indeed a pleasure to learn of your impending trip to Washington to appear before the Roberts Congressional Committee on Highway Safety, at which time you shall report on the Drivotrainer.

To date, we have been most pleased with our installation. In fact, we now consider experience in the Drivotrainer as an integral part of our teacher-preparation program in driver education.

Response from prospective teachers has been excellent. They remark that basic fundamentals learned during the Drivotrainer film sequence has been a tremendous aid to them as they in turn assume the responsibility for teaching others to drive.

Representatives from other organizations in our State; namely, law enforcement and driver licensing, have became most interested in the tremendous possibilities inherent within the Drivotrainer program. I might add, Paul, that our work this term has involved a goodly number of adult beginners who find in the Drivotrainer a real opportunity to restore confidence in their ability to drive.

Paul, I sincerely hope these few statements will prove of some value to you and all members of the committee. Knowing of your enthusiasm and genuine interest in traffic safety, I am sure your trip will be a most successful one.

Sincerely,

ROBERT O. NOLAN,
Instructor, Highway Traffic Safety Center.

FORT COLLINS PUBLIC SCHOOLS,
OFFICE OF SENIOR HIGH SCHOOL PRINCIPAL,
Fort Collins, Colo., June 3, 1957.

MR. PAUL CULLEN,
Superintendent, Department of Public Education,
Ætna Casualty & Surety Co., Hartford, Conn.

DEAR PAUL: As you probably know, I have been in the safety field since 1940, including safety inspector for the Air Force. It was while with the Air Force that I first worked with training devices such as the Ætna Drivotrainer. In the case of the Air Force, it was the flight simulator, the Link trainer.

I believe that the Drivotrainer has helped me to train a larger group of students than ever before. I have taught driver education for 7 years. It has helped me to discover weaknesses or faulty habits and attitudes on the part of the student long before anyone is subjected to any danger on the streets and highways.

I have been able to orient the starting students without exposing them to any danger at the beginning stage. I have also been able to show simulated emergency situations and record actions taken by each student, and then discuss the actions and correct faulty ones.

After 16 hours of Drivotrainer instruction I take the students into an area, away from traffic, where they drive a dual-controlled car. We spend about 30 minutes per student in this area, after which we go directly into traffic.

I believe that the Drivotrainer has helped me to do a better teaching job, especially in developing good student attitudes and habits, and also in developing sound judgment in emergency situations.

In view of the success of the Drivotrainer program, it is not a part of the physical education department but, rather, a department in itself. Our ultimate goal is to require a complete course in driver education for graduation from our high school.

I hope that this letter will help you in your objective. If I can be of any help, please do not hesitate to call on me.

Sincerely yours,

CONN F. PADILLA.

Mr. CULLEN. Students, too, like the Drivotrainer. In New York, more than 90 percent said it helped them learn good judgment, good sportsmanship, and what to do in emergencies. In Los Angeles, more than 90 percent found the course valuable and said they would recommend it to their friends and classmates.

We are continuing our activities to effect further improvements in the Drivotrainer and in the course of study. Within the last year, for example, Drivotrainer cars with automatic transmission control have been made available.

We have established a Drivotrainer curriculum advisory committee, consisting of leading safety educators from all sections of the country, and this summer, upon the committee's recommendation, we will produce three new Drivotrainer films—Driving on Expressways, Driving on Rural Highways, Driving on One-Way Streets.

As Mr. Withe said, and as you gentlemen have indicated by your actions, highway safety is everybody's business. We hope we are doing our part.

Mr. ROBERTS. Thank you, Mr. Cullen. We would certainly like to commend you on your statement.

There is one particular portion of the statement that appeals to me, and that is the part where you point out that driver training has a twofold value, not only that it reduces the number of accidents, but that it results in building up proper social attitudes on the part of the students. We have too much, I would say, juvenile delinquency today.

Here is my question: Do you believe that the fact that we find that whereas only 79 percent of the Nation's drivers are in the teen-age group, we have had some figures which show that they account for or are involved in—we will put it that way, are involved in—perhaps, 27 percent of the fatal collisions, do you think that perhaps delinquency is reflected somewhat in bad driving in the teen-age groups?

Mr. CULLEN. I think that can be a factor, sir. I doubt that it is the major factor. It seems to me that what happens in the youngsters is this, and the studies I have read seem to bear it out, that, in the 16-to-18 age bracket, when the youngsters are just learning to drive, they tend to be fairly cautious, because they are learning a new skill. Then, when the mechanical skills build up, they get rather reckless. It is the natural heedlessness of youth. I think you would draw somewhat of a distinction between delinquency and heedlessness, lack of thought or knowledge of the consequences.

Potentially, these younger drivers, if they are trained, if they are inculcated with the proper attitudes, can be our best drivers. Just last week, in Hartford, the Courant took a survey, and they said, "Which is more of a hazard on the road—a slow driver or the fast one?" They asked the question of teen-agers. Without exception, the youngsters stated that they felt the slow driver was more of a hazard. "The fast driver can usually control his car; fast drivers do not cause annoyance to other motorists."

Again, it is a matter of attitude, rather than outright delinquency, I would say, sir.

Mr. ROBERTS. I certainly agree with you, that the teen-age driver should be the best driver on the highway, from the standpoint of physical equipment and less reaction time needed, and natural skill and ability. Certainly, they have better vision, have better physical equipment, and they really should be our best drivers instead of being among our worst drivers. I would like to certainly agree with you on page 2, where you say that safety authorities agree that the purpose of driver training is not simply training in skills; it is training in good attitudes, good judgment, and what to do in emergencies.

Mr. Friedel?

Mr. FRIEDEL. Mr. Withe, I would like to know whether your group has tried to sell the school boards in the different areas about Drivotraining.

Mr. WITHE. The question is have we tried to sell them Drivotraining?

Mr. FRIEDEL. The school boards, yes.

Mr. WITHE. We have, indirectly. I think our greatest objective, though, has been the school officials, the superintendent of schools, and the teachers in the school. We have directed no special effort to the school boards as yet, except as they are citizens and we try to carry this message to all citizens but not to school boards as an organized group in the community.

Mr. FRIEDEL. The reason I put that question is because I think in the past session of the legislature in Maryland, they had a driver-education bill proposed and the school board officials were opposed to it, maybe for fear that they would curtail their budget, and the schoolteachers would not be paid their proper salaries. They were opposed to it for some reason or another.

It does not seem to me that school officials should be opposed to driver education. Maybe they were not given any demonstration of what good it can do, and the money that could be saved.

Mr. WITHE. Of course, as we get into these special situations, if we are called into a certain city, we are then usually invited by the school board to present our total picture, and we do that. What I mean is that we do not broadcast any education material specially to school boards. We do to the whole public.

Then when we get into a special situation, we have a film which describes the use of the Drivotrainer that we take to the school board.

Mr. FRIEDEL. What is the cost of one of these machines, or what would it cost to set up a classroom?

Mr. WITHE. The cost of a 15-place unit is approximately $18,000. That is the 15 cars and the projection apparatus and recording apparatus.

Mr. FRIEDEL. Was I correct in understanding from your statement that 1 teacher could teach 15 in 5 different classes a day?

Mr. WITHE. Yes.

Mr. FRIEDEL. Five different periods?

Mr. WITHE. Yes.

Mr. FRIEDEL. In other words, 75 pupils a day?

Mr. WITHE. Yes.

Mr. FRIEDEL. That is all.

Mr. ROBERTS. Mr. Schenck?

Mr. SCHENCK. Mr. Chairman, I would like first to sincerely commend both Mr. Withe and Mr. Cullen for their fine statements. I think these are two of the better ones we have had.

Mr. WITHE. Thank you.

Mr. SCHENCK. I have been interested in this matter of insurance rates. It has been my understanding that in all rate structures where there is a driver under 25 years of age in the family that the insurance rates are higher.

Mr. WITHE. That is correct in the case of male drivers.

Mr. SCHENCK. How about in the case of young ladies?

Mr. WITHE. Not in the case of female drivers.

Mr. SCHENCK. Why is that?

Mr. WITHE. Well, because their record has been better.

Originally we had that penalty on both male and female drivers, but there has been a better experience in the case of the female drivers.

Mr. SCHENCK. Has that been the practice of all insurance companies?

Mr. WITHE. Yes, I believe so. That has been the practice in the Bureau of Underwriters, and in Ætna, and I believe it is pretty general.

Mr. SCHENCK. Are your rates increased because of the greater number of accidents?

Mr. WITHE. Yes. Insurance rates are a reflection, directly, of the number of accidents. That is what they are based on. All accident costs are pooled, and out of that comes the rate.

Mr. SCHENCK. Based on the age group, in this case?

Mr. WITHE. Yes, in this particular case.

Mr. SCHENCK. Do the Bureau companies grant any particular bonus such as a reduction in rates for safety driving records?

Mr. WITHE. Yes. They grant a discount of 10 percent for graduates of a driver training course that meets the prescribed standards, male drivers.

Mr. SCHENCK. I am speaking also of adult drivers.

Mr. WITHE. No. There is no rate discount for adult drivers.

Mr. SCHENCK. Was there not at one time a rate discount from the bureau companies?

Mr. WITHE. There was a rate called the safe driver reward discount which operated with adult drivers, yes.

Mr. SCHENCK. Did you find that that was not justified?

Mr. WITHE. There was a good deal of difficulty in administering it, and it was found that in order to give that discount, it was necessary for the whole rate level to be increased, in order to take care of the discount.

For technical reasons of rate structure, it was found not advisable to continue it.

Mr. SCHENCK. It would seem to me, as one who was formerly in the insurance business for some time before becoming a Member of Congress that there ought to be some way to encourage safe drivers, and to place a higher rate cost on those who are prone to accidents.

Mr. WITHE. There have been many efforts to do that, and many people do believe it is a laudable objective. But we have not been able to work it out in a practical manner as yet.

Mr. SCHENCK. In Mr. Cullen's discussion of a moment ago, he was pointing out that some of the younger drivers were extremely alert and safe drivers, but that as they grew a little older, they began to lose some of their alertness and safe-driving habits.

Is that what you said, Mr. Cullen?

Mr. CULLEN. In effect, yes, sir. I think the studies show that the 16- to 18-year-old group has a somewhat better driving record than, let us say, the 18 to 24. The presumption is that, as it is when you are learning any new thing, you tend to be a little more cautious. Let us say if you were just learning to swim, you tend to stay in closer to shore and do not take too many chances. The thought is that as the youngsters are learning in the 16 to 18 group they tend to be fairly cautious. When they believe that they have learned driving, when they have learned all they need to know about driving, the natural, to use a kind word, exuberance of youth takes over, and that exuberance can sometimes take some rather harmful forms.

Mr. SCHENCK. Do your statistics show that in age groups?

Mr. CULLEN. I believe that is correct, sir, that the age-group statistics show a higher rate of accident involvement proportionally for the 18 to 24, for example, than the 16 to 18.

I heard recently, and I am not positive of this, that the 18 to 29 group also shows a higher accident involvement.

Mr. SCHENCK. And you feel that this is a result of a lack of mature judgment?

Mr. CULLEN. I think it is that, sir, but I would like to pin it back a little more specifically to the fact that I think it is a lack of inculcating in the student the attitude, the proper attitude, for good driving.

The statement is very frequently made "As you think, so you drive." If a person is going to use a car as an expression of his ego, the chances are he is going to be a rather poor driver.

I think if you can catch the youngsters in their formative years, and inculcate an attitude of safety, I believe then you will go a long way toward licking this traffic-safety problem.

You see, most of us have just picked up what we know about driving. Very few of us have had formal courses.

I think as Mr. Withe pointed out, if driver education and training was universal throughout the country, we could put on our highway, I believe it is, 1,750,000 trained drivers a year. Multiply that by 10 or 20 and think of the effect it would have, say, having 20 million drivers on our highways, trained in safety.

Mr. SCHENCK. You are indicating psychologically, then, that the frustrated feeling resulting from many causes of someone who is trying to express himself through his driving attitudes and ability is causing many accidents?

Mr. CULLEN. That is right, sir. If we could just get over the fact to the youngsters that it is not an adult thing to express themselves that way, through the driving of a car, that they should be self-controlled—and I think most youngsters want to be adult, they want to be grown up—if we could get that simple point over to them, I think we would make a lot of progress.

Mr. SCHENCK. Mr. Withe, do you have any conviction that driving permits issued at 16 years of age is too young an age and that the driving permits should be reserved for a later age?

Mr. WITHE. I think that many of us feel that it is a very young age to give a license to take a powerful car out on the highway and face all the dangers that there are in that mechanism.

In Connecticut, we have recently taken a step in the direction of making it more difficult, in a way. We have a probationary license up to age 21, and for 2 years, I believe it is, the license is subject—as all licenses are subject—to good driving and good behavior, but in this case they are probationary for 2 years, in the case of all drivers under 21, which, I think, is a step in that direction.

Mr. SCHENCK. In Connecticut, Mr. Withe, are the driver's licenses subject to periodic renewal?

Mr. WITHE. Well, of course, all licenses are renewed yearly.

Mr. SCHENCK. On an annual basis?

Mr. WITHE. Yes.

Mr. SCHENCK. Is there any physical or mental requirement for a renewal, or is it automatic?

Mr. WITHE. There are at present no tests. It is automatic on renewal.

Mr. SCHENCK. Would you feel that a uniform traffic code which required certain achievements or certain approved physical, ability and condition would be valuable?

Mr. WITHE. Very valuable. I would think that a check every 5 years, certainly, would be very much justified.

Mr. SCHENCK. And would you feel that a general uniform traffic code governing all aspects of driving would be worthwhile throughout the Nation?

Mr. WITHE. I think that is one of the big things that this committee could promote, a uniform code as well as uniformity in other directions, such as traffic signals and signs. It is very difficult for a driver going from one State to another to accommodate himself to different sets of signals and signs.

Mr. SCHENCK. Mr. Chairman, that is all I have, but I again want to congratulate and commend both Mr. Withe and Mr. Cullen for their very fine statements and their very clear answers.

Mr. ROBERTS. Thank you.

Mr. Loser?

Mr. LOSER. Thank you, Mr. Chairman.

I think it is a very fine thing that a great insurance company would engage in an effort of this kind. I want to express my appreciation to the Ætna Insurance Co. for the very substantial contribution it is making to traffic safety, and, of course, the very fine statements that both of your gentlemen have made reflects the great service that you are rendering to your company as well as to the Nation.

Mr. WITHE. Thank you.

Mr. LOSER. I was quite interested in the "good attitude" phase of the training course. I have not been in Washington too long, just a few months, and I just drive occasionally because of the fact that I am not too well acquainted with the traffic regulations and the streets, and so forth. This "good attitude" would be a very fine thing for some of the drivers in the District of Columbia, including Maryland and Virginia drivers.

I have just noticed this: When I stop at a red light if I do not take off immediately on the change, some fellow behind me, ever so often a taxicab driver, will sound his horn like he was operating a fire engine, or something of that sort.

So this good attitude on the part of drivers, teaching young men and young women over the Nation, I think, is a very fine thing.

I am happy to see that this great insurance company is making such a substantial contribution to highway safety.

I was interested in the question that Mr. Schenck asked you about a uniform code. I was wondering, as you applied that, whether or not it would be a penal code on behalf of the Federal Government or just merely directory or educational.

Mr. WITHE. I think a great deal of good could be accomplished in the matter of a recommended set of signals, but I am not sure but what personally I would be in favor of putting some enforcement back of it. I am not prepared to commit my company on that.

If we have ICC regulations for the transportation of explosives in a safe manner, I do not know why there should not be some sort of requirement that anything like a car going across the country would be subject to certain rules.

Mr. LOSER. I want to thank you for your contribution at this meeting.

Mr. WITHE. Thank you very much, Mr. Loser.

Mr. ROBERTS. Mr. Bush?

Mr. BUSH. Thank you, Mr. Chairman.

I want to express my appreciation for the fine presentation of Mr. Withe and Mr. Cullen this morning.

I want to agree with them, too, that education in this field of traffic safety is one that I feel will do much to give us greater accident prevention on our highways and our streets.

To pursue a little further what Mr. Schenck started with, and taking your answer, on youngsters 16 years of age getting permits to drive, I believe you said that your experience with 16- to 18-year-olds had been very good, and yet you are saying that you believe that it might be a good thing if the age limit was, perhaps, higher.

Mr. WITHE. I am speaking as the father of two daughters who want the car, and I would find it much easier to govern the use of our family car if there were a little higher age or permit.

Mr. BUSH. I am sure that is true.

Mr. WITHE. I think it would help in many situations where we know youngsters have taken cars out at an age when they really cannot know all the consequences, and they have gotten into situations that have resulted in serious accidents.

Mr. BUSH. Do you not feel that, on these younger drivers, and, according to the records that you have, their safety has been pretty good, most of it has been accomplished through fear? I mean they have a fear that, if they have an accident, when they get home they are going to get into trouble with their parents. Do you not think that that has a very material bearing on it?

Mr. WITHE. Yes, I do. And, of course, the parental attitude is a great force there. In some cases, perhaps, we parents are not restrictive enough.

Mr. BUSH. They are still young enough to be under the direction of the parent.

Mr. WITHE. Yes.

Mr. BUSH. I have two children myself. I remember when my boy became 16 years of age we had a lot of arguments about his learning to drive. He wanted to drive right away. He would go down and get in the car when I was not around. I had the car sitting in front of the garage. One day he got in and got it started, and he went through the garage. He did not know what to do. Of course, he was afraid to face me. He had fear built up in him. He knew he had done something that he should not have done. I feel that with these youngsters, you will find that that same thing happens with them.

The other thing I wanted to ask you was this: There are a lot of large insurance companies, but are they carrying on safety programs and advocating them, such as you are?

Mr. WITHE. Yes; many of them are, individually, doing various things, and then, through associations, they are doing a great deal. The companies in the Association of Casualty & Surety Companies support an accident-prevention department in that association, which is staffed and works all over the country in these matters. That has been testified to before your committee, I believe.

Mr. BUSH. Has it been your experience that the commercial operators have a better experience than just the run-of-the-mill operators?

Mr. CULLEN. I would believe so, sir. I could not cite figures, but

just from talking with our engineering department that has charge of fleet-safety work, that is an impression that I have, that the professional driver usually has a lower accident involvement.

Mr. BUSH. I am surprised that you would give me that kind of an answer. I was expecting that you would be more positive. We happen to carry insurance with the Ætna for a good many years, and we have had your safety engineers in connection with the fleet business we operated for 35 years. The engineer would come in every month and sit down with our drivers. We would have very frank discussions. I am sure, through the training that they got, and through my own desire to have them not have accidents, it was very helpful and eliminated a lot of accidents. I would think you would be very positive in your statement on that.

Mr. CULLEN. Sir, I was generalizing about all commercial drivers, not the select Ætna policyholders.

Mr. BUSH. That is the reason I think that some education in this matter can be very valuable, because I know that the commercial lines have a better experience. They are so situated that they can get their men together, their operators together. As a result, they do have safety meetings and try to get it across to them that it is their behavior behind the wheel that is going to cause the accidents.

Mr. CULLEN. The other thing, if I could add to that, is that you have a process of selection working for you. You can select only those drivers that you think will be courteous and considerate on the road, whereas just about anybody who can pass, in many cases a very simple test, can get a license.

I wonder if I could just track back to a question that was asked earlier, and offer this comment. The question was whether age 16 was too young to get a license. In several States, now, laws exist whereby youngsters cannot receive a license until they reach age 18 unless they are graduated from approved driver-training courses. That is really being responsible for the spread of driver education very markedly in those States. That is the way the Michigan law reads now.

Mr. BUSH. This car that you showed pictures of—could you describe in a little more detail what it consists of? Just to look at it in the picture, it is an open car, with no windshield or anything to obstruct the view.

Mr. ROBERTS. I might say to the member that it is on exhibition out on the parking lot, and maybe this afternoon you will get a chance to see it. I think you would get a better answer by seeing it than you will by any comments he may have from the pictures.

Mr. BUSH. I am sure that is true.

Mr. ROBERTS. If the gentleman wants to go ahead, it is all right with the Chair.

Mr. BUSH. Is this Drivotrainer a car that was designed by the manufacturers, or was it your idea to have them come up with a car like this so that you could buy it and get it in the hands of these various schools?

Mr. WITHE. It developed with us. We have been working 20 years in the development of devices of this general nature. The evolution was, finally, that we came up to a single-place unit, and that was observed by the New York Board of Education. They asked us to de-

sign a multiplace version of this device. We presented to a manufacturer our ideas and their ideas for such a device. It was built to our specifications. Of course, it has gone through quite a process of development. Each year there has been an improvement, we think, in the nature of its operation.

Mr. FRIEDEL. Would the gentleman yield?

Mr. BUSH. I will be very happy to.

Mr. FRIEDEL. For the record, what does it have? Does it have a speedometer?

Mr. WITHE. It has all of the controls which are on a real car, all the operating controls, all linked with the central tower where, electrically, the results of touching any one of these instruments is recorded on a moving sheet.

Mr. FRIEDEL. Do you have a chart that registers every move?

Mr. WITHE. Yes. There is a sheet with columns on it, with a column for each pupil, and down the sides are the results of the actions that they take in response to the situations that they see on the screen. That is done automatically.

The instructor can stand there at the tower, as we call it, and watch what is coming in from each station, from each pupil.

There is also a permanent record afterward that they can consult.

Mr. FRIEDEL. Thank you, Mr. Withe.

Mr. BUSH. I do not want to take up too much time, Mr. Chairman, because I can go on with these questions for a long, long while.

Mr. ROBERTS. I would like to remind the gentleman that we will have to pursue the civil rights bill this afternoon, and we still have some more witnesses to hear.

If the gentleman would indulge the Chair, I would like to move along as soon as we can.

Mr. BUSH. I will certainly yield to the good wishes of the Chair, and withhold further questions.

Mr. FRIEDEL. Mr. Chairman, I have just one question.

Specifically on H. R. 5416, in section 4 (1), where it mentions that the Government contribute $28 million for youth driver education program, on a matching basis with the States, the way the country and Congress is economy minded, how do you feel about that? Are you in favor of the Government appropriating money for driver education on a national basis to the States?

Mr. WITHE. Speaking from the standpoint of my position in the company, we are on record before your committee as members of the Association of Casualty Companies in favor of this subsidy. There have already been witnesses who have committed the association as being in favor of that subsidy, which would mean that our company, as a member of that association, would support that view.

Mr. FRIEDEL. Thank you.

Mr. ROBERTS. Thank you very much, gentlemen. We are indebted to you for your testimony.

The next witness is Mr. Anthony L. Ellison, safety education officer, District of Columbia, Washington, D. C.

STATEMENT OF ANTHONY L. ELLISON, TRAFFIC SAFETY OFFICER, DEPARTMENT OF VEHICLES AND TRAFFIC, DISTRICT OF COLUMBIA

Mr. ELLISON. My name is Anthony L. Ellison. I am traffic safety officer of the Department of Vehicles and Traffic for the District of Columbia, in charge of the District's traffic safety education programs.

At the outset, I should like to clarify that I am speaking this morning for myself and not as a representative of the District Commissioners. It is obvious that the District Commissioners approve of the principle of driver education, since the District of Columbia offers the driver education course in each of its public senior and vocational high schools. However, the Commissioners have not had an opportunity of studying the details of the present bill, particularly with reference to the method of assisting the States to establish programs for driver education.

Therefore, my purpose this morning is to assist the committee in any way I can by furnishing such information as I have on the driver education course in the public high schools. Before joining the Department of Vehicles and Traffic, I organized the first driver education course in the Theodore Roosevelt High School in the District.

I should like at this point to engage in a bit of semantics. I notice that on page 2, line 2, of this bill there is reference to "driver training programs," while on the same page, line 13, there is reference to "driver education programs." While it is not too important whether we use the term "driver training" or "driver education" in referring to the approved high-school course, it is of extreme importance to understand that there is a world of difference between this course and the driver training course which is given in commercial driving schools.

I am convinced that there would be even greater support for the public-school course if this distinction were more widely understood. I, of course, have no quarrel with the commercial training course, which generally does an excellent job in attaining its goal. That goal is to teach the minimum physical skills required to operate a motor vehicle sufficiently well to qualify for the driver's permit. We know the commercial driving schools achieve this goal, since their customers are almost guaranteed that they will pass the permit examination after even 7 or 8 hours of training.

The driver education course offered by our public schools, on the other hand, is of an incomparably higher order. Its principal objective is entirely different. It aims at developing in the young person those attitudes which will permit him to operate a motor vehicle in all safety to himself and to others for the remainder of his life. Like the commercial course, it also attempts to teach the minimum basic skills needed for the mechanical operation of a motor vehicle, but the teaching of these skills is basically a method of putting into practice in a realistic learning situation, under professional guidance, those principles and attitudes which are taught in the classroom.

The teaching of the correct driver attitude and the imparting of a sense of moral and social responsibility while behind the wheel of one of today's high-powered automobiles is the basic objective of the driver education course. With all due respect, it is obvious that almost anyone can teach the correct mechanical operation of a motor vehicle, but the objectives of proper attitude and sense of responsibility can be achieved best by a trained, responsible, and dedicated educator.

We are obviously showing progress in applying the proven techniques of accident reduction—realistic traffic laws, effective law enforcement, stricter driver licensing, traffic engineering, and other measures which regulate the use of an automobile. But, we must go one step further. We must teach Americans the art and science of safe driving.

The driver is the key factor in traffic safety. He must be carefully trained so he—

1. Will want to drive safely;
2. Will know how to drive safely;
3. Will accept the responsibilities which are granted with the driver-license privilege.

How can we best do this? Through high-school driver education.

No better agency can be found for teaching beginning drivers than our Nation's schools. Effective driver education courses will develop the essential knowledge, correct habits, fundamental skills, proper attitudes and sound understanding necessary for the safe use of our highway system.

Driver education is generally a separate subject in the high-school curriculum. It can, however, be integrated with other subjects, as for example a unit in science, social studies or health education. The course is offered at the grade level where most students have reached or are approaching minimum legal driving age.

The driver education course is divided into two phases. The classroom phase consists of learning experiences centered around classroom instruction, with lectures, discussions, audiovisual aids, ample use of laboratory exercises and field studies in traffic. The second phase, usually called the practice-driving phase, provides actual driving instruction in an automobile, used on an established driving range or more often on public streets and highways. This phase supplements, but never substitutes for the classroom instruction.

The period allotment for the classroom phase, as well as for the actual driving time of the practice driving phase, should conform with national standards of a minimum of 30 clock hours for the classroom work and a minimum of 6 clock hours per student for actual driving experience in the practice driving phase, exclusive of observation time.

The most important requisite for the success of a driver education course is a good teacher. The instructor selected should have excellent driving ability and attitudes, patience, a likeable personality, imagination, energy, interest in youth, knowledge of the subject, and a burning desire to do an effective teaching job.

The following standards are generally observed:

1. Meet requirements for State secondary school teaching certification, including personal qualities and academic achievements.

2. Successfully complete a college-level driver education teacher preparation course approved by the responsible State department.

3. Exhibit above-average driving ability established by specific requirements as to driving record and experience.

4. Possess a valid State driver's license.

The dollar cost per student for a complete course in driver education, classroom and practice driving instruction, varies throughout the Nation from $20 to $45 depending upon local conditions and types of courses. This cost is about the same as for other special courses in the curriculum.

The question is often asked: What is the actual value of the high-school driver-education course? Does it actually reduce the number of automobile accidents?

Many studies in the area of driver education strongly indicate that drivers who have had a course in high-school driver education establish better driving records than those who have not received such formal training.

My own personal feeling is that while each of these studies in the field of high-school driver education may have generally tended to show that driver education "pays off" not one has succeeded in proving beyond all doubt that the course was the sole, or even principal reason for the difference in traffic accident experience. Before reliable studies can be developed to determine the exact effect of this course on the driving records of students, we would need to know the individual characteristics of human behavior needed for consideration in comparing groups. Also, we would need to develop reliable yardsticks for measuring these human traits.

It appears obvious that the objectives of the high-school, driver-education course are too long range, and involve too complex a pattern of human behavior to be evaluated statistically, if at all. And there are other difficulties; for example, how can we evaluate the accidents which did not happen because our driver-education student did not in later life, as a result of the course, speed or drive after drinking?

It may seem curious for a person who is testifying in favor, in strong favor, of driver education to be questioning the validity of research which tends to prove the practical value of this course. My feeling about these attempts to prove the practical value of driver education is the same as my feeling about attempts to prove the practical value of teaching English, history, geography, or any other academic subject. While evaluative attempts to measure the effectiveness of these other subjects in the school curriculum have been going on for hundreds of years, no statistical study, to my knowledge, has ever proved beyond any doubt the ultimate effectiveness of any academic course in terms of the future behavior of the students.

In other words, none of the academic subjects taught in our high schools can boast of an actual guaranteed dollars-and-cents value. Yet few people would question the effectiveness of any well-taught course.

My point is simply that we do not need to defend the existence of high-school driver education by way of questionable statistical research projects based on motor vehicle records. We can take it for granted that a good driver-education course will produce desirable results. If we question this assumption, then we question the value of all formal public education. Our faith in the value of the educational approach is strongly manifested by the billions we spend each year to maintain our public school system.

Of course, the fact that we do not know enough about the mental makeup of the driver at present to compare groups of drivers in a statistically reliable investigation does not mean that we should not attempt to gain more knowledge about the effect of psycho-physical characteristics on the ability to handle an auto in a safe and efficient manner. On the contrary, we must gain more knowledge concerning the personality and character patterns which are possessed by both bad and good drivers. If a program of driver education is to succeed in changing behavior, it must be based on better knowledge of driver behavior.

Officials with long experience in the field of traffic safety realize that the basic cause of accidents lies not in the physical ability of the driver, but rather in his mental makeup. It is demonstrated every day on our highways that the tremendous advances in automotive and highway engineering and the herculean efforts of our enforcement agencies are completely nullified when the education of the driver in acquiring a better attitude and a higher sense of responsibility has been neglected.

I think you will find that safety officials all over the Nation are counting on future generations to lower the death toll on our highways. We believe, conservatively, that accidents could be cut in half if all drivers were made as good as the best. The most effective way of achieving this ideal condition is through driver education. This course should be offered to every student in every high school throughout the land.

Thank you, sir.

Mr. ROBERTS. Mr. Ellison, I want to thank you for a very excellent statement, in my opinion. I would also like to say this, that although you are perhaps taking me somewhat to task when I quote certain statistics, I certainly agree with you, and I would say that that is the viewpoint of many other people who are much more able in the safety movement than the chairman of this subcommittee. I think it was Mr. Ashworth, in Chicago, who is with the Northwestern Traffic Institute, who said that we frequently say that speed is responsible for a certain percentage, alcoholism is responsible, lack of adequate law enforcement is responsible for a certain percentage, and yet, he says, "We know those things are true, but we do not know how well we know them."

I think that is what you are saying here. You are saying that we cannot actually say that the teen-age drivers are absolutely responsible for this percentage of accidents. Someone, I am sure, has honestly and sincerely arrived at statistics.

However, I think there again, in your statement, you start with that premise and you go ahead to say that we do not have to justify the need for driver education by statistics, because we believe in education and certainly we believe in driver education. I think it is just that simple, and I think you have said it very well.

Mr. ELLISON. Thank you.

Mr. ROBERTS. Mr. Bush, do you have any questions?

Mr. BUSH. Mr. Ellison, I want to express my appreciation for your fine presentation. I believe you did a magnificent job in presenting your case and what education means to safety in driving. We do have other elements, of course, to consider. You could have all the training that could be given to these people until they are out of school,

and still, if they do not exercise good judgment after they get out on the highways away from you, then what is the answer?

Mr. ELLISON. That, sir, is why I insisted on the driver education rather than driver training, because it is the education phase of the course which will help develop the judgment. We were talking before about a minimum age for driver permits. My personal feeling is that the minimum age does not matter so much as the maturity of the person.

Someone mentioned before that the teen-ager must develop an adult attitude. We have quite a few adults every day who demonstrate very immature attitudes. Therefore, I think the criterion should be the maturity of the person.

Incidentally, there may still be States which license drivers at the age of 14 and 15, because of need, such as the use of a vehicle on the farm. So, the minimum age seems to vary with conditions. I do not think we can be too hard and fast about the minimum age. But I think we should insist on the maturity of the driver. Consequently, to my mind, the best way of achieving this, and perhaps the most expeditious way, is a driver-education course.

Mr. BUSH. I thought for a long while that there is nothing that you have in your possession that is as valuable to us as that which will allow you to drive from one end of the United States to the other—your driving permit. When you have that taken away from you, it is only then that you realize how valuable that little card is to you.

Also, I realize that the time has come that to take the drivers' permits away from them is creating hardships, because most people have to have their cars to make a livelihood for themselves and their family today.

There must be, however, some plan developed that, if this individual on a highway is driving recklessly, one who causes accidents, we must take that license away from him and charge him something for getting it back, even though he only is without it a short time. We must make him appreciate how valuable that driver's license is.

In my opinion, without that driver's license, most people could not get around today. What can we do? What plan have you thought of that can be adopted to make them more conscious of the value of that permit?

If we can get that solved, I think we can eliminate a lot of accidents.

Mr. ELLISON. Perhaps one way would be to publicize the fact that the driver's permit is actually not a right, but a privilege.

I know that many people will contest this viewpoint. I once did a little research in our law library, and found that the greatest number of cases that I could find cited emphasized the point, over and over again, that the driver's permit is a privilege which a person may obtain and retain so long as he demonstrates that he can use that permit to drive safely and not risk the lives and property of others.

I think if we gave more publicity to that bit of information, I say it is a fact—and, of course, there is some question about that—about that concept, if we publicize that concept more widely, perhaps that would help.

I do know that in our own experience in our department of vehicles and traffic, even the suspension for 2 days is a very serious blow to the individual. We have had people break down and cry, because it is that important to them. But, if it is that important to them when it

is taken away, it should be that important to them when they are driving.

Mr. BUSH. And to have them think what the value is, and if they do not behave on the highway, that they will lose it. I think that a plan should be developed, through teaching, through training, which must emphasize that point more strongly.

As you said, it is a permit, and it is one of the cheapest things that we can purchase. In our State, I believe, we pay $2 for a year's permit.

Mr. ELLISON. Ours is even cheaper; $3 for 3 years.

Mr. BUSH. But, once you lose it, if you had to pay something to get it back, or if you had to do something—and you cannot do without it—if there were some way of making that individual realize the value of that, it seems to me, he would be more careful in protecting and keeping it.

Mr. ELLISON. In our department, we emphasize the fact that, for major violations, the permit is revoked for a minimum period of 6 months, and the person may reapply at the end of 6 months. It does not mean that it will be restored in 6 months, but he may reapply. So, he has to demonstrate his qualifications for the permit, once he has lost it.

Mr. BUSH. That is all, Mr. Chairman. I do not want to take any more time.

Mr. ROBERTS. Thank you, Mr. Bush.

Mr. Ellison, I take it, from your statement, that you would think that the key factor in driver education would be the instructor; that it would be personnel over equipment, so to speak?

Mr. ELLISON. Yes, sir. I think there is no question about that.

Mr. ROBERTS. Let me ask you this question: Do you not think there should be some restriction on the use of Federal money so as to prevent funds being diverted to nonessential driver-training activities, or to be spent in a topheavy manner, for equipment as compared to personnel?

Mr. ELLISON. Actually, sir, I do not believe I am qualified to evaluate that, but I think that consideration should be given to the obtaining of the services of qualified teachers, persons who are, first, teachers, and then driver-education instructors. They must be basically teachers, qualified under the State's certification laws.

Mr. ROBERTS. Thank you very much.

Mr. Friedel?

Mr. FRIEDEL. Mr. Ellison, I want to commend you for your very fine statement. It is very sincere and very constructive. We have had quite a few hearings, and out of the hearings we have heard about speed, roads, and everything else. It all came back to about 85 to 90 percent of all the accidents are due to the human element. That is where I think driver education fits into the pattern. That might be able to hold down the terrific death rate from traffic accidents that we have on the highways and streets today. I am 100 percent in favor of driver education.

Mr. ROBERTS. Thank you very much.

Our next witness is Mr. Burton W. Marsh, director of traffic engineering and safety department, American Automobile Association, Washington, D. C.

Mr. MARSH. Mr. Chairman, and members of the committee. We have gone to a considerable length to prepare a statement here which deals, we think, rather comprehensively with certain aspects of this problem which we believe would be useful to your committee. We have various materials to discuss in presentation for the record. It would clearly be quite impossible to do this if you are adjourning at 12.

I should like, therefore, to know what your instructions are in this matter. We think that what we have is quite important. Of course that is a matter for you to decide.

Mr. ROBERTS. I would certainly agree with you, Mr. Marsh, that the material is very important. The subcommittee is quite anxious to hear you and give you adequate time.

I believe, though, that we will probably have a quorum call shortly after 12. It might be the best procedure to allow you to to continue this afternoon at 2 o'clock, to have you start your statement at 2 o'clock, provided we can get permission to sit this afternoon and, if not, to then give you another time to appear.

You are here in Washington all the time?

Mr. MARSH. Yes, sir.

Mr. ROBERTS. I think with that the subcommittee will adjourn subject to the call of the Chair.

(Whereupon, at 11:53 a. m., the committee recessed, to reconvene at the call of the Chair.)

DRIVER EDUCATION

MONDAY, JUNE 17, 1957

HOUSE OF REPRESENTATIVES,
SPECIAL SUBCOMMITTEE ON TRAFFIC SAFETY OF THE
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D. C.

The special subcommittee met at 10:15 a. m., pursuant to call, in room 1334, New House Office Building, Hon. Kenneth A. Roberts (chairman of the subcommittee) presiding.

Mr. ROBERTS. The Subcommittee on Traffic Safety will please come to order.

The Special Subcommittee on Traffic Safety of the House Committee on Interstate and Foreign Commerce is meeting to continue the hearings which the subcommittee commenced on June 10 on H. R. 5416, legislation to provide the States with Federal funds in order to establish driver-training programs; I might add, to expand driver-training programs.

Our first witness is Mr. Burton W. Marsh, director of the traffic engineering and safety department, American Automobile Association, Washington, D. C.

I would like to say, Mr. Marsh, in welcoming you to our hearings, that the Chair would like to recognize not only you but the splendid organization which you represent, which has been active throughout the years, particularly with our high-school groups.

It was my pleasure and privilege to be on the reviewing stand when we recently had 34,000 high-school students from all of these United States to parade in Washington, and that was a great demonstration, I think, of the splendid work that you do.

I believe we have some figures which show that pedestrian deaths have been cut about 50 percent due to the work of the High School Safety Patrol, and perhaps that is carried on in the grammar schools, too. I think it is.

I know that it has been a great work, and I am sure that it must be a rewarding experience to be connected with this organization. We welcome you here this morning, and we will be interested to hear what you have to say.

STATEMENT OF BURTON W. MARSH, DIRECTOR, TRAFFIC ENGINEERING AND SAFETY DEPARTMENT, AMERICAN AUTOMOBILE ASSOCIATION, WASHINGTON, D. C.

Mr. MARSH. Thank you, Chairman Roberts.

Gentlemen of the committee, my name is Burton W. Marsh. I am director of the traffic engineering and safety department of the Ameri-

can Automobile Association here in Washington, D. C., and I would like to ask the privilege, if I may, of having appear a little later Dr. Samuel A. Williams, who is the driver education instructor of the Anacostia High School here, and has been there for 5 years.

He has been making some experiments for a year now with this device which we will talk about later, and I should like to have the privilege of having him explain some of the practical experimental work which he has done, if I may do so, later on.

Mr. FRIEDEL (presiding). If we have time, we will be very happy to do so.

Mr. MARSH. Thank you.

Mr. FRIEDEL. You may proceed.

Mr. MARSH. Thank you.

The American Automobile Association sincerely appreciates the opportunity to appear before this subcommittee. For more than 20 years the AAA automobile clubs and headquarters staff have viewed the subject of driver and traffic education for young people of high-school age as one of the most important—and one of the most promising—fronts on which the nationwide traffic-improvement program is being carried on.

Throughout its history, the AAA and affiliated automobile clubs have participated in a number of important traffic-safety activities, and we sincerely believe that the several millions of dollars which the AAA family has spent in assisting in the promotion, servicing, and upgrading of driver education have yielded results of the greatest possible significance.

The interest of the AAA in this matter is expressed in its policy, which is as follows:

> Driver education offers the greatest single potentiality for future safe, orderly, and convenient highway use. A continuing vigorous program should be prosecuted for advancement of driver-education courses in high schools, including behind-the-wheel instruction, for all high-school youths. High standards are also essential in adult driving schools, with suitable State and local legislation licensing and controlling commercial driving schools. In driver education, greatly increased emphasis must be placed on driver and pedestrian responsibilities and sportsmanlike attitudes.

We recognize that while this policy statement expresses the AAA's wholehearted support of driver and traffic education programs, and urges continued efforts to find the ways and means of expanding these programs in the schools, it does not deal specifically with the proposals now under consideration by the subcommittee in H. R. 5416.

In this regard, we regret that the AAA is not in a position at this time to offer comments on this particular legislation. Under our governing procedures, the position of the association on matters such as this must originate either by action of the delegates of our members at an annual meeting, or, during interim periods, by action of our executive committee. Up to the present time, there has been no opportunity to present the proposals contained in H. R. 5416 to either of these groups.

Based on the experience the AAA has had with the education of youthful drivers, we offer to the subcommittee certain information about the origin and growth of these programs, their operation, the results they are achieving, and some of the problems that must be faced and solved if the benefits of driver and traffic education are to be made available to all the eligible youth of the Nation.

Earliest interest in attacking street and highway accident problems through systematic education of drivers in high school driver and traffic education courses—and I might interject there, if I may, that we believe the broader concept of driver and traffic education should be one which would govern increasingly the content and philosophy of these courses—came about in the early 1930's.

The first course of this type was given at the State College (Pa.) High School, in 1933, by Prof. Amos E. Neyhart who, since 1936, has been actively associated with the AAA in this program as an educational consultant on the staff of the traffic engineering and safety department.

At the time of this beginning, little or nothing was available, in this newly conceived educational field, by way of materials, experience, methods of teaching, or educational programs and standards. Text materials, prepared specially for high-school use in the subject, had not been published. No training aids existed.

There were no teachers who had had the special preparation required to conduct such courses. Cars for practice driving were not available. Dual controls were practically unheard of.

School administrators, with few exceptions, had not yet become aware of the tremendous implications for the saving of lives and the preparation of responsible traffic citizens inherent in such a program. The schools which were interested were completely lacking in the necessary funds to initiate and conduct driver and traffic education courses.

When, some 25 years ago, high-school driver education was first conceived, it was necessary to come to grips with the above basic needs of such a course, before it could possibly win the interest and acceptance of educators.

Through the help of many interested organizations and individuals who had the vision to foresee its potentials, rapid strides were made in developing materials and procedures for servicing the program.

The first teacher-preparation course on this subject was conducted at Pennsylvania State University—then Pennsylvania State College—in the summer of 1936, by Prof. Amos E. Neyhart, under the joint sponsorship of the university and the AAA.

From this small beginning, teacher preparation in the subject has grown steadily, except during the war years. Whereas the one course in 1936 resulted in giving 36 teachers special preparation to offer driver education, by 1957 the total prepared through AAA assistance alone has swelled to 14,627 teachers in basic courses, 1,485 teachers in advanced courses.

In addition, 584 college professors have participated in 1-week workshops in this subject. We have a tabulation in the supplemental material which shows, by years, the numbers of these various courses and the numbers of teachers attending, and the number of professor workshops, and the number of professors attending, and gives a little bit of further information on this, and I might add that it emphasizes the point that the longer period of training is coming into greater prominence.

To these totals must be added those teachers and professors prepared in courses conducted by others, and there are a good many of those.

Most of the early courses on this subject consisted of 1 week, or 40 hours, of instruction. The tendency now is to conduct most basic courses on a 2-week basis. There is an increasing demand for advanced courses for those teachers who have already had a basic course.

In recent years, increasing numbers of colleges are offering courses in driver and traffic education and related subjects as an established part of their regular teacher preparation program. In 1956, colleges offered 303 such courses, which is quite a number.

The five original text pamphlets which the AAA produced in the 1930's to meet the immediate demands for teaching material leveled at high-school needs and interests were superseded, in 1947, by the first edition of the AAA high-school textbook, Sportsmanlike Driving.

This was followed in 1948 by an enlarged, revised edition and again, in 1955, by a completely rewritten third edition, which I should like to offer for the record and any use you gentlemen may care to put it to.

This text, as indicated by a study released in 1953 by the research division of the National Education Association, has been used as the basic text in this subject by 75 percent of all the high schools in the country offering driver education.

This book is supplemented by a well-organized group of teaching materials, made up of a teacher's manual—and I should like to offer that in the same way, for whatever consideration or use you may care to put it to—and a student's project workbook—and I should like to do the same with that—standardized objective tests related to the book, a road test check list and material for step-by-step instruction of the student in the car.

Mr. ROBERTS (presiding). Mr. Marsh, without objection by the subcommittee, all of those will be made available in the files of the subcommittee.

Mr. MARSH. Thank you.

(The material referred to will be found in the files of the subcommittee.)

Mr. MARSH. Good text materials published by several other organizations or individuals are also now available to driver-education teachers.

THE DUAL CONTROL CAR PROGRAM

One serious problem which schools had to meet in the early years of this program was that of safeguarding the practice driving of these learners. The AAA devised a simplified, inexpensive dual control which has since become universally used.

An even greater problem was the nonavailability of practice driving cars. Schools could not afford to purchase them.

The president of the AAA contacted the president of the Pontiac motor division of General Motors in 1936 and, as a result of this contact, Pontiac graciously agreed to lend a number of vehicles to high schools which used specially trained instructors for their driver-education programs. Up until the war years, Pontiac was practically the sole supplier of driver education cars on a loan basis, supplying from 50 to 75 cars per year.

Most practice driving instruction in high schools ceased during the war years. It resumed after the war, and AAA officials visited leading automobile manufacturers to secure their cooperation in providing more cars for use in the high-school program.

To meet the great demand for cars, a number of leading manufacturers and their dealers developed a cooperative program whereby the dealer would provide the car to the high school without charge, the manufacturer helping in various ways.

The number of vehicles provided by dealers with the assistance of manufacturers increased from approximately 1,500 cars during the 1947–48 school year to a reported more than 9,000 vehicles during the 1955–56 school year.

I might interject there that for this year the figure will be larger, but it is not yet available.

The number of vehicles loaned through arrangements made by AAA-affiliated clubs and headquarters has grown from 1,500 in 1947–48 to over 6,000 vehicles in the current school year.

Since the wall of 1955, General Motors, Ford, Chrysler, and American Motors have all announced a $125 allowance to offset a substantial portion of the cost of this loan program to dealers.

Even with this incentive plan, one problem remained. Many dealers waited until October or November in order to deliver to the school a new model. This meant that the school was without a car for several weeks at the beginning of the fall term, which seriously handicapped the program.

A plan recently announced by Ford, if generally adopted by manufacturers, will largely correct this situation. Ford provides an allowance for a current model loaned at the beginning of the school year, and then a second equal allowance when this car is replaced by a new model.

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And here I should like to refer to an AAA policy relating to that matter, in which we are endeavoring to secure, or to indicate our approval, at least, for congressional action which would help in this matter and, if I may, I would like to read this policy. It is headed "Federal Excise Tax Exemption for High-School, Driver-Education Car."

The American Automobile Association urges the Congress to exempt from the Federal excise tax on automobiles those cars which are loaned exclusively for driver-education courses in secondary schools, provided, however, that upon later sale of such cars the appropriate Federal excise tax will be collected.

Mr. ROBERTS. I might say to the gentleman at this point that, among other Members who have introduced the bill to which you referred, is Mr. Rains, who is one of the members on the Committee on Banking and Currency, and I think there is a very good chance that that bill may be considered at an early date. At least we hope so.

Mr. MARSH. Thank you, Mr. Chairman. We hope it will be favorably considered.

Final figures on the number of dual-control cars in use throughout the country during the current school year will not be available until August, but we estimate that over 10,000 cars were loaned by dealers during 1956–57. At $2,000 per unit, roughing it out at that, this represents an investment by dealers of approximately $20 million.

Instruction of driver-education students can be enriched by the use of various testing devices and teaching aids, in addition to text materials and practice driving cars.

A number of tests of vision and reaction time have been developed, as well as working models to demonstrate various mechanical features of the car. We have developed quite a number in our organization, and various others have, too, and we should be very happy to provide to the committee a descriptive folder or booklet indicating what these are, and telling something about them.

Mr. ROBERTS. Mr. Marsh, pardon me again for interrupting you. Has your organization developed a link trainer?

Mr. MARSH. Yes, sir. We are going to speak about that next, Mr. Chairman, if I may.

Mr. ROBERTS. I am sorry that I anticipated you.

Mr. MARSH. Well, you are exactly at the correct time, sir.

In recent years—may I make this other statement about these other devices, and then come to this.

These testing devices not only increase interest in the driving course, but help point out driver limitations. Sometimes they disclose personal deficiencies which frequently can be corrected, or at least compensated, satisfactorily compensated for by adjustments in driving.

In recent years, simulative training devices have been developed to reduce the time spent in practice driving. Among these are the Drivometer, developed by Dr. A. R. Lauer, of Iowa State College, the Drivotrainer developed for Ætna Casualty & Surety Co., and the Auto Trainer developed by Earl Allgaier of the AAA, who is here today if any question arises, by the way.

We have a photograph blown up here of this, and also we have a short descriptive folder concerning it which we would like to submit.

Mr. ROBERTS. I believe we can make that particular exhibit a part of the record, without objection on the part of the members of the subcommittee, to be incorporated in the record.

Mr. MARSH. We would appreciate that, if that is your pleasure.

(The document referred to is as follows:)

SPECIFICATIONS

General operation.—This trainer consists of clutch, brake, accelerator, and transmission, which control the speed and direction of the roadway painted on a moving belt. The steering wheel turns the front wheels of a miniature car.

Power.—A one-sixth horsepower, 115-volt variable speed Westinghouse motor drives the roadway. Maximum current required is 6 amperes. A 6.3-volt transformer provides current to operate the counter and buzzer.

Bearings.—Eighteen sets of grease-sealed ball bearings are used.

Scale.—The miniature car and roadway are scaled, so that 1 inch equals 20 inches.

Transmission.—A conventional transmission provides three forward speeds and reverse. The gear ratios are: Forward 1, 1.8, and 3.24; reverse 4.32.

Inertia.—Inertia is provided by a 15-pound flywheel.

Speedometer.—The speedometer gives approximate readings in miles per hour.

Horn.—A 6-volt buzzer sounds when the horn button is pressed.

Sign changer.—Ten instruction signs are presented in succession, a different sign being shown for each revolution of the belt.

Traffic signal.—This consists of a green light which is normally on but which can be changed to red by the instructor pressing a pushbutton near the timer.

Roadway.—White traffic lanes 6 inches wide are painted on a 2-ply plastic-coated canvas belt 2 feet wide and 10 feet in circumference.

Miniature car.—The car which travels on the roadway is 10 inches long and has front wheels which are turned by a full-sized steering wheel.

Scoring.—One counter and two timers are used to measure performance on the test as follows:

A. Steering: One unit is counted for each 6 inches of travel that the miniature car is kept in the center of the lane.

B. Reaction time: Six trials are given during the test. The final reading gives the average reaction time in hundredths of a second.

C. Total time: One unit is counted for each one-tenth minute required to complete the test. A reading of 55 means 5.5 minutes.

Space requirements.—With student seated, the floor space required is about 3 feet by 9 feet.

Shipping information.—The trainer is shipped in two units as follows:

	Control unit	Roadway unit	Total
Weight crated for domestic shipment.....pounds..	220	105	325
Weight boxed for export.....do....	310	160	470
Volume packed for export.....cubic feet..	25	9	34
Charge for export packing.....			$35

[From traffic engineering and safety department, American Automobile Association, Washington, D. C., June 14, 1957]

AUTO TRAINER SUPPLEMENTARY INFORMATION

The Auto Trainer was developed to enable one teacher to give the first practice driving lesson to several students at a time. In this way, one teacher can instruct more students per semester and thus cut the cost of instruction per student. The Auto Trainer is designed to reduce substantially the amount of time which a student must spend behind the wheel of a regular car.

Essentially the Auto Trainer is made to simulate a real car by providing the standard controls of the driver's compartment. These controls are used to drive and steer a miniature car on a moving roadway. With this arrangement the student can practice the same manipulations he would ordinarily practice during the first lesson in a car. He can learn to start, shift gears, stop, steer, etc.

Power to drive the moving roadway is provided by a variable speed motor which is started by the ignition switch and starter button. The speed is controlled by the accelerator pedal. The clutch pedal operates a clutch which engages the motor to operate the revolving roadway. A miniature transmission and gear shift lever enable the student to drive the miniature car forward or backward. It has 3 forward gears and 1 reverse.

The steering wheel steers the front wheels of the miniature car. With these standard controls the student car drive the miniature car forward and backward at various speeds and make most of the maneuvers required in driving, even the rather difficult maneuver of parallel parking.

When a student makes a mistake he immediately sees the error and can correct it. If in parking he hits the curb, he can pull out and try again. Since each unit is complete, and entirely independent of other units, each student can practice at his own pace. The current price is $700 per unit.

Some of the other auxiliary controls incorporated in the Auto Trainer include a handbrake, speedometer, rear-view mirror, and meters for measuring steering ability, reaction time, etc. The instructor can give instructions simultaneously

to as many students as there are Auto Trainers in the room. Instruction cards given step-by-step procedures are also provided so that students can practice with a minimum of supervision by the instructor.

While the Auto Trainer is a relatively new development, it is now in use in 22 States and 11 foreign countries.

Experimental data concerning the effectiveness of the Auto Trainer are at present rather limited. During the past year, four trainers have been used in an experimental study at the local Anacostia High School. A control group of 38 students received an average of slightly over 6 hours of behind the wheel practice in a car only. The experimental group of 71 students received an average of 4 hours behind the wheel of a car and 6.6 hours of practice on the Auto Trainer. Both groups did equally well on a road test given at the end of the course. From these preliminary figures, it would appear that 6.6 hours of practice on the Auto Trainer is about equal to 2 hours of practice driving in a car.

This experimental study will be continued next year. The instructor expects to train 10 students per period per semester where the car only is used and increase this to 15 students per period per semester for the classes where the Auto Trainer will be used. In other words, the number of students trained per period will be increased by 50 percent by the use of these Auto Trainers.

In mentioning the Auto Trainer, we do not wish to infer that devices of this type can be used to eliminate the need for dual-control cars. Our only hope is that devices of this type can be used to reduce the time a teacher must spend in a car with each student and therefore increase the number of students one instructor can teach per year.

Mr. MARSH. Several schools have built special classrooms fitted with units having dummy controls, such as steering wheel, brake pedal, clutch pedal, and accelerator; that is, in addition to these I have mentioned.

We would like to come back, if we may, Mr. Chairman, to a little further discussion of this at the end. I believe you were out a moment, but Dr. Samuel A. Williams, driver education instructor of Anacostia High School, is here, and he has for a year now been conducting tests with this device, with four of these devices, over here in Anacostia, and he would be very glad to go into that, if you would like, at the end of this presentation.

Impressive evidence of the basic importance of drive education in an America on wheels can be seen in the fact that perhaps no other subject—I think this is extremely significant, Mr. Chairman and gentlemen—perhaps no other subject has had so rapid an educator acceptance, as indicated by the rate of inclusion in the high-school curriculum.

In a 1952 report on a research in the New York metropolitan area, on the rate of inclusion of newly instituted school subjects in the schools, Donald R. Ross, research associate, Institute of Administrative Research, Teachers College, Columbia University, stated:

> Whereas it normally takes 15 years for a desirable practice to diffuse through the first 3 percent of the schools nationally, behind-the-wheel driver education has been adopted in 87 percent of the high schools in the Metropolitan School Study Council in this same period of time.

Looking further into the growth of driver education in the past 20 years, we find the following impressive facts:

In the school year of 1936–37, 3 driver education cars were in use; in 1955–56, about 9,000 cars were used. Four hundred and fifty students attended courses in 1936–37; over half a million attended in 1955–56. And the number is greater in the current year, the year just ended.

The accumulated total of high-school students who have had the advantage of a driver education course over the 20 years is nearly 3

million. And in the supplemental material submitted with this, there is a tabulation—the heading, I must say, has a typographical error. It should say, "Growth in Driver Education Program 1936–56," in supplement B, and it gives there for each of the years the number of cars in use, the number of persons trained, and an accumulated total trained to the end of the year.

Every State department of public instruction now recognizes its responsibility in some degree for furthering high-school driver and traffic education. Many departments have added specialized driver education staff personnel, have evolved courses of study, and have set up standards for courses and for teacher certification. In at least three-fourths of the States, teachers of driver and traffic education have organized professionally for the purpose of improving their programs.

Public acceptance of driver education programs is dramatically documented by endorsements of the governors and chief school administrators of every State; and I would like to submit, for whatever is the correct use of your committee, a little booklet in which there are these endorsements from the then governors of all the States, quoting their views, and also the same for the then head of the State departments of public instruction of all the States, quoting their views.

And, I might add, there is another one of police leaders around the Nation, quoting their views on this subject, and we would like to submit those for the record or for whatever appropriate purpose your committee might find.

Mr. ROBERTS. I believe the proper practice would be to incorporate the documents for reference in the files of the subcommittee, without objection.

(The documents referred to will be found in the files of the subcommittee.)

Mr. MARSH. In addition, the State motor vehicle, police, and highway departments and many university centers concerned with traffic and safety have endorsed and effectively contributed to driver education.

The action program of the President's Committee for Traffic Safety urges that—

> (*a*) School administrators should as far as practicable provide driver education and training as an integral part of the curriculum when students are near driving age; and whenever possible should offer similar courses during the summer and at night sessions, and for adults in the community. * * *
>
> * * * The secondary school years, when students ordinarily reach legal driving age, are most suitable for training drivers. The secondary school, therefore, offers the best known opportunity for reaching the largest number of youths about to begin driving. * * *

I may add, there has recently been a growing view it is desirable, however, to begin some of this instruction at even an earlier age.

Virtually every national organization and many local governmental agencies and citizen groups having an interest in traffic safety, have made some contribution to the promotion of these programs, in recognition of the great need for and the established worth of driver edu-

cation. The underlying basis for this substantial continuing support can no doubt be found in these four significant facts:

1. Although the lowered rate of traffic fatalities, in terms of vehicle miles traveled, shows the effects of efforts spent toward its reduction, actual numbers of traffic fatalities and injuries remain high. That is for the general population.

2. Some 2 million youths come of driver licensing age each year.

3. Youthful drivers, without driver education courses, have had serious traffic accident records. And, I may say, in general they have not been as good as some other age groups.

4. Youthful drivers, properly prepared in sound driver education courses, are shown by many studies to have only 50 percent as many accidents as youths without such courses.

Mr. ROBERTS. Mr. Marsh, may I interrupt you at that point, if it does not throw you off your statement?

Mr. MARSH. No, sir.

Mr. ROBERTS. I have been challenged a time or two on the various statistics which you have given, and I wonder if you could pin that down for us a little bit. Does that grow out of studies made by your own organization?

Mr. MARSH. Yes, sir, I will be very glad to.

In fact, one of the documents I should like to submit for the record, or whatever the appropriate use may be, is entitled "Driver Education Proves Its Worth," and in this we have assembled—this is now a year or so old, so perhaps there is another 1 or 2 by now—we have assembled in this every study of which we could secure information as to the effect of driver education on accidents and on violation records, and so on, and they are all set forth here.

Now, I would add very quickly that these are not perfect. A gentleman appearing before you a week ago brought out, and very appropriately, that they are not perfect studies. We have endeavored in what I think was the largest of these studies ever made, in Cleveland, we spent several thousands of dollars on it, we endeavored to get rid of some of the factors which reduced the correctness and validity of these studies, we tried to match the groups of youths by economic level and by various other factors, to get rid of some of these difficulties.

To some extent we could; to some extent we could not, although we were studying thousands of records there, because Cleveland has been very progressive in this field. But we would be the first, I am sure, to say that these are not perfect in many respects, but they are so consistent in their results—there is one in here which is not, by the way, and it is in here just the same.

Mr. ROBERTS. I think it might be very helpful, Mr. Clerk. Will you send that up for examination by the subcommittee, and we will see whether it will be incorporated in the record.

Mr. MARSH. I believe there are 20 of these studies set forth there and, as I said, one of them is a negative study. It is a very small study, but there is one that is negative.

Mr. ROBERTS. Without objection, this study will be incorporated in the record.

Mr. MARSH. Thank you.

(The document referred to is as follows:)

Driver Education Proves Its Worth

Summary, Results of Driver Education Programs

Prepared by traffic engineering and safety department, American Automobile Association, Washington, D. C.

At least 6,000 high schools are now offering complete courses in driver education, including behind-the-wheel practice driving, to one-third-of-a-million students anually at a cost of about $30 per student.

Is the improved driving record worth this cost? In an effort to find the answer, an analysis was made of all known studies on the results of driver education.

An attempt has been made in this report to include all studies of any consequence regardless of the findings obtained. In general, the results indicate that driver education courses reduce traffic accidents one half.

Results varied widely—even to the extent of showing negative results in some cases. Generally, these wide variations were due to chance, because of the small number of cases involved.

In Arizona, the number of high-school students involved in fatal accidents dropped from 23 in 1944 to 2 in 1947. High-school driver education was started in 1944. By 1950, 50 of the 70 high schools in the State had both classroom instruction and practice driving.

A study made during 1950 in Delaware showed that untrained drivers had nearly 5 times as many accidents and 5 times as many arrests as a comparable group of trained drivers.

A group of 200 adults completing a driving course in Washington, D. C., had 1 accident and 8 arrests for moving violations compared with 11 accidents and 42 arrests for an equal number of untrained drivers.

In Bloomington (Ill.) High School, the untrained boys had over twice as many accidents as the trained boys, and the untrained girls had about four times as many accidents as the trained girls.

A limited study in Maryland did not show any difference in the accident records of the trained and untrained boys, but the untrained boys had about 50 percent more violations. The untrained girls had about 40 percent more accidents than the trained girls, and twice as many violations.

From 1941 to 1947, the Massachusetts high schools offering driver education increased from 48 to 217. During this same period, personal injury accidents involving 16- and 17-year-olds decreased from 1,203 to 642.

Also in Massachusetts a study has been underway since January 1950 of 3 equal groups of 500 each. Among those who took a complete course, there were 15 percent fewer operators who had accidents, 45 percent fewer operators with violations and 61 percent fewer operators with licenses suspended as compared to the group with no training at all. The record of the group that had classroom instruction only ranked between the two groups.

In Michigan, untrained boys had about 11 percent more accidents and 3 times as many violations per thousand months of driving as the trained boys. Trained girls had more accidents and violations than the untrained girls, but the number was too small to be of much significance.

In New Hampshire, over 1,270 trained drivers had only one-fourth as many accidents as an equal number of untrained drivers. The trained drivers also had only one-eighth as many convictions.

In Camden, N. J., the trained boys had nearly twice as many accidents and violations as the untrained boys.

Reports from widely scattered schools in New York indicated that the trained boys had about as many accidents as the untrained boys but about half as many violations since they had received a license. While very few of the trained drivers were involved in accidents or violations before obtaining a license, many of the untrained drivers were so involved.

In Cincinnati, Ohio, a comparison was made between students taking a complete course and those receiving classroom instruction only. For the men, those who took the complete course had nearly as many accidents and 77 percent as many violations as those receiving classroom instruction only. Among women, those who had the complete course had much better accident and violation records, but the sample was too small to be very significant.

In Cleveland, Ohio, trained high-school boys had half as many accidents and 85 percent as many violations as the untrained drivers.

High-school driver education was started at Stillwater, Okla. in 1946. During that year, 52 high-school students were involved in traffic accidents compared to none in 1950. During this period, accidents involving drivers of all ages increased from 402 to 553.

At Pennsylvania State College, a group of trained drivers had 5 accidents, while an equal number of untrained drivers had 13 accidents.

In Pennsylvania 1,500 persons who took a complete course were compared with an equal number who had no instruction. For both men and women, those who had a course had only about half as many accidents and violations as those who received no instruction. The men having the course had less than a third as many arrests as the untrained men. For women, the number of arrests was too small to be of any significance.

Over a period of 3 years in Vermont, the trained drivers had one-fourth as many accidents and one-fifth as many violations as an equal number of untrained drivers.

INTERPRETATION OF RESULTS

Is teaching a high-school student how to drive in a regularly organized class worth the cost? Most reports agree that the cost of car operation and the teacher's salary exceed $30 for each student given classroom instruction and 8 hours of practice driving. This expense can be justified only by the effect of such a course on the individual's driving behavior.

While there is a wide variation in the results reported in various studies which have been made, the overall picture indicates that high-school students who have completed a high-school driving course have substantially better driving records than their classmates who have received no such instruction. Since these courses are a relatively new addition to the high-school curriculum, improvements in teaching methods are to be expected during the next few years with a consequent improvement in results.

The average person is likely to be confused by the great variation in results reported by various studies. These differences are probably due more to the nature of the analysis made than differences in the quality of instruction given. Ideally, a study of this type should compare two groups of people who are exactly alike, except that one group has taken a driving course and the other has not. Such a study is impracticable. The nearest approach to this is made by comparing the records of trained and untrained drivers in the same high-school class. In reviewing the results of such studies, the following factors should be kept in mind:

1. *Sex.*—Since boys usually have many more accidents than girls, comparisons should be made between groups of the same sex or groups with the same percentage of boys in each. Even if a course were ineffective, a group of trained girls would probably have a better record than untrained boys.

Any study which does not segregate the two sexes is likely to be misleading, as there generally would be a larger percentage of girls in the trained group than in the untrained group.

2. *Exposure.*—It would be desirable to compare two groups with equal miles of driving experience under equal driving conditions. Obviously this is impossible. As a practical matter, about the best that can be done is to compare the two groups on the basis of months of driving since receiving a license or completing a driver education course. Generally, the records for both trained and untrained groups should be checked beginning on the date when the trained drivers completed their driving course. Obviously, accidents and violations on record before the course was completed should not be charged against the trained students. By the same token, it is not fair to record accidents and violations for the untrained group for this same period, as this would be recording a longer exposure period for the untrained group than the trained. Generally, comparisons should be made only between groups of licensed drivers. While admittedly some driving is done without a license, generally unlicensed persons are nondrivers.

3. *Interest and attitude.*—Unfortunately, from a statistical standpont, the interest in driving of the trained and untrained groups is not equal, since frequently those enrolled in a course are students who are most interested or have a real reason for learning to drive. While no studies of attitudes have been made, it is quite likely that students volunteering for a driving course have a different attitude than those students who do not volunteer to take a course.

4. *Age.*—If the groups compared are from the same high-school class, the ages are likely to be about equal. Comparisons of a group of trained high-school students should not be made with drivers selected at random. It is well known that young drivers have had worse records than some groups of older drivers.

5. *Education.*—The groups compared should have about equal education. A high-school driving class should not be compared with persons of the same age selected at random from the license files. Persons selected at random would be less likely to have a high-school education.

6. *Driving conditions.*—The accident rate depends partly on driving conditions. Accidents per mile of driving in heavy congested traffic will be more than in open areas where there is little traffic. For this reason, the two groups should be from the same general area.

7. *Quality of instruction.*—Even if the two groups studied were equal in every respect, results of different studies would not be the same. Some courses might be more effective than others and would thus show better results.

In the following paragraphs, an attempt has been made to summarize a number of studies which have been made. Unfortunately, in many cases, information concerning the procedure followed in making the studies is rather limited, so it is difficult to explain the wide variance in results reported. Gathering data of this type is by no means easy. Therefore, researchers should be given credit for what information they obtained rather than criticized for omissions which have been made. Schools, police, motor vehicle, highway and State education departments, safety organizations, as well as local AAA clubs, deserve much credit for data which has been accumulated to date. Even though the results are limited, they represent thousands of man hours of work.

This report is an attempt to summarize all existing studies known at the present in the hope that such information will help to encourage the driver education program. If justice has not been done to some studies, it has been because an attempt was made to present the essential information in as few pages as possible. There has been no intention to slight any study.

Arizona

A driver education program under the direction of the Traffic Safety Division of the Arizona Highway Department was started in 1944. Arizona has 70 high schools. During the 1950–51 school year, 50 of these high schools gave both classroom instruction and behind-the-wheel training, while an additional 17 high schools gave classroom instruction only.

The following table indicates that with the expansion of driver education in the State the percentage of young people involved in fatal accidents and moving violations decreased.

Year	High-school student drivers involved in fatal accidents	Citations for moving violations		
		17 and under	18 and over	Percent 17 and under
1944	23	443	3,991	10.0
1945	11	446	4,625	8.8
1946	6	319	8,024	3.9
1947	2	(1)	(1)	(1)
1948	3	(1)	(1)	(1)
1949	2	(1)	(1)	(1)

[1] Not available.

If it is assumed that enforcement and accident reporting remained fairly constant over the period involved, these figures then show a marked improvement in the driving records of young people. Since driver education expanded greatly during this period, it is reasonable to assume that much of this reduction was due to the driver education program. It is quite likely that the program influenced not only those actually receiving driving instruction but their classmates as well.

Delaware

In 1953–54, an evaluation of the driver education program in Delaware, in terms of the performance records of the participants in the program compared

with the performance records of nonparticipants, was undertaken by the State department of public instruction and the motor vehicle division of the State highway department.

Driving performance records of 2,186 former students were checked one-half had received driver education instruction, including behind-the-wheel training, while the other half was untrained. All were of the same age group. The breakdown is also made by sex. A brief summary of this report is listed below.

	Per 100 drivers			
	Warnings	Accidents	Arrests	Licenses suspended
Boys:				
Trained	37.3	28.0	55.6	.6
Untrained	48.8	44.2	77.8	3.2
Girls:				
Trained	3.6	5.7	4.4	.2
Untrained	9.7	10.1	5.9	0

The total property damage costs for the 617 trained males were $44,402, and for the matched 617 nontrained drivers the costs were $80,058.

This represents a difference of $35,566, or more than the entire driver education program cost to the State of Delaware for any 1 year of operation during the period that the trained drivers included in the study were enrolled in the public schools.

The property damage costs of the driver education-trained females were $6,551, and of the nontrained females, $8,915.

District of Columbia

In 1947, the Metropolitan Police Department studied the records of 200 drivers who were graduated from the District of Columbia Motor Club Driving School after having 2 years of driving experience. These records were compared with those of 200 nontrained drivers selected at random. Results were as follows:

Drivers	Number	Arrests for moving violations	Total arrests	Accidents
Trained	200	8	93	1
Untrained	200	42	220	11

In this particular study, it is quite probable that there were differences between the two groups other than the training involved. Adults that voluntarily enroll in a driving school are not generally a random sampling of the general public. Generally speaking, 4 out of 5 persons enrolling in these schools are women, whereas only about 1 out of 5 of all drivers are women.

Illinois

In 1950, all students in Bloomington High School who drove were asked to complete a questionnaire without signing their names. Questionnaires were completed by 39 freshmen, 116 sophomores, 116 juniors, and 135 seniors. Results obtained were as follows:

Student drivers	Number of students	Number in accidents	Percent in accidents
Boys:			
Trained	68	8	11.8
Untrained	175	49	28.0
Girls:			
Trained	86	4	4.7
Untrained	77	13	16.9

On the basis of estimated mileage driven, the trained driver had 1 accident for each 41,910 miles of driving, whereas the untrained driver had 1 accident for each 23,280 miles.

Iowa

A very complete study of the effect of driver education on accidents and violations was made by Dr. A. R. Lauer, of Iowa State College. The records studied included 7,692 names selected at random from the license file plus 2,800 names of persons who had completed a driver education course. A self-addressed double post card was sent to each person, and about 1,500 replies, 1,015 from men and 493 from women, were complete enough for analysis. The accident-violation index was computed by giving one point for each accident and one-half point for each violation. Since age and sex have a significant effect on accident and violation records, the data given below have been tabulated by age and sex. Only accidents and violations occurring during 1948 and 1949 were included.

Accident and violation records

Age	Trained persons		Untrained persons	
	Number of persons	Accidents and/or violations	Number of persons	Accidents and/or violations
Men:				
16 to 20	132	33	72	28
21 to 25	18	6	62	16
26 to 30	11	4	114	33
31 to 35	14	4	107	19
36 to 40	13	5	82	17
41 to 45	13	3	76	20
46 to 50	13	2	66	14
51 to 55	13	1	50	13
Over 55	56	2	103	18
Total	283	60	732	178
Women:				
16 to 20	153	5	10	0
21 to 25	34	2	23	2
26 to 30	4	0	38	1
31 to 35	4	0	46	5
36 to 40	4	0	41	4
41 to 45	5	1	39	6
46 to 50	7	0	30	1
51 to 55	3	0	18	0
Over 55	8	2	26	1
Total	222	10	271	20

Maryland

Records were obtained for students completing driver education courses in June 1948, January 1949, and June 1949. These records were compared with students from the same schools who had taken no such course. Only persons obtaining licenses were used. Records were obtained as follows:

Area	Trained drivers	Untrained drivers
Allegheny County	16	43
Caroline County	27	28
Howard County	38	14
Talbot County	22	14
Wicomico County	42	9
Washington County	51	28
Southern High School, Baltimore	18	15
Patterson Park High School, Baltimore	38	52
Forest Park High School, Baltimore	29	41
Douglas High School, Baltimore	17	4
Total	298	248

In order to make a fair comparison, accidents and violations for the same period of time were compared. For the trained driver, the accidents and violations were recorded which occurred after the person had completed his training and after he had received a license.

For the untrained drivers, the same period of time was used. These figures were used in computing the accident and violation rates per 100 drivers.

As a matter of interest, many of the untrained drivers had accidents before the period under investigation. These were not used in computing rates since there was no comparable traffic exposure for the trained drivers. These accidents and violations are shown in parentheses in the table below:

	Number of drivers	Accidents		Violations	
		Total	Per 100 drivers	Total	Per 100 drivers
Men:					
Trained	194	10 (3)	5.1	19 (3)	9.8
Untrained	199	10 (13)	5.0	32 (16)	16.0
Women:					
Trained	104	3 (1)	2.9	1	1.0
Untrained	49	2	4.1	1	2.0

NOTE.—Figures in parentheses indicate additional accidents and violations which occurred before the period under investigation.

Massachusetts

An analysis of personal injury accidents in Massachusetts indicates that in recent years, as the number of schools offering driver-education courses has increased, the personal injury accidents to 16- and 17-year-olds have decreased.

Year	Schools with driver education	Personal injury accidents involving 16- and 17-year-olds
1941	48	1,203
1945	140	935
1946	195	746
1947	217	642

Another study made in Massachusetts covers the period from January 1, 1950, to August 1, 1952. Three groups of licensed high-school drivers were originally selected. Each group consisted of 400 boys and 100 girls as follows:

Group A. Had no classroom or behind-the-wheel instruction.

Group B. Had classroom instruction only.

Group C. Had both classroom instruction and behind-the-wheel training.

The records for the 31 months studied are:

Group	Number in group	Operators in fatal and injury accidents	Operators with violations	Operators with suspensions
A (no instruction)	500	27	108	62
B (classroom instruction)	500	24	86	45
C (complete course)	500	23	57	24

Additional details may be obtained from Rudolph F. King, registrar, Registry of Motor Vehicles, Boston, Mass.

Michigan

The Automobile Club of Michigan, with cooperation of school officials, local police, State police, and State licensing authorities, obtained records for over

1,000 high-school students. The table below gives the number of reports obtained from various cities.

City	Men		Women	
	Trained	Untrained	Trained	Untrained
Albion	0	6	7	0
Allegan	11	19	11	3
Ann Arbor	17	54	59	24
Dearborn	30	65	32	19
Detroit	82	49	5	5
Highland Park	19	17	5	6
Jackson	23	64	26	14
Lady of Lourdes	24	0	27	0
Marquette	15	23	28	18
Munising	0	11	7	0
Petoskey	6	24	20	8
River Rouge	46	42	26	7
Total	273	374	253	104

The accident and violation records of these people were checked during July 1950. The driving experience averaged 17.5 months. For the trained group, all accidents and violations were totaled from the date the driver-education course was completed or from the date the individual was licensed, whichever was later. For the untrained group, all accidents and violations occurring after the person was licensed were recorded. Because of the small number from each school, averages were computed only for the totals from all schools. The results are tabulated below.

	Number of persons	Months of driving	Accidents		Violations	
			Total	Per 1,000 months	Total	Per 1,000 months
Men:						
Trained	273	4,168	7	1.7	13	3.1
Untrained	374	7,523	14	1.9	69	9.2
Women:						
Trained	253	4,117	3	.7	5	1.2
Untrained	104	1,698	0	.0	1	.6

Michigan (Bay City)

Records of students graduated in June 1949 from Central and Handy High Schools were analyzed for a period of approximately 1 year following their date of graduation. Most of the students who received driving instruction completed their driving course the last of 1949. In order to make the results more or less comparable, only accidents and violations occurring during a 1-year period following graduation are tabulated below:

	Number of students	Accidents		Violations	
		Total	Per 100 students	Total	Per 100 students
Men:					
Trained	28	0	0	2	7.1
Untrained	58	4	6.9	7	12.0
Women:					
Trained	88	0	0	0	0
Untrained	46	0	0	0	0

Minnesota

The State department of education is conducting a 5-year study involving 3 groups of drivers as follows:

A. 1,000 students who have had both classroom instruction and behind-the-wheel training.

B. 1,000 students who have had classroom instruction only.

C. 1,000 students who have had no instruction of either type.

Records have been tabulated for 1950, 1951, 1952 and 1953. These are tabulated below. Unfortunately, there is no breakdown by sex.

	Group	1950	1951	1952	1953
Accidents	A	28	43	48	36
	B	44	58	78	78
	C	60	82	89	84
Convictions	A	6	22	44	65
	B	13	27	61	101
	C	25	49	69	179
Revocations	A	0	0	0	1
	B	0	0	0	3
	C	1	0	0	4
Suspensions	A	5	13	13	12
	B	3	3	11	14
	C	12	14	11	14

NOTE.—A—Complete course; B—classroom; C—no training.

While it is dangerous to draw conclusions from small samples, there is some tendency for the relative value of training to decrease over a period of time. When comparing those with no training and those with a complete course, it will be noted that the ratio of the accident record is about constant over the period studied. However, the ratio of convictions drops from 4.17 to 1.83. It is quite possible that over a period of time the untrained driver learns by experience what the trained driver learns in a shorter period of time in the course. It will be interesting to see what this trend will be over a period of years.

New Hampshire

During 1951 a survey was made among 1,270 persons who completed a driver education course and an equal number who had taken no course. Results are as follows:

Drivers	Number of drivers	Accidents		Violations	
		In 1 accident	In 2 accidents	Convicted of 1 violation	Convicted of 2 violations
Trained	1,270	23	3	5	0
Untrained	1,270	104	7	43	0

No information is given as to the number of boys and girls involved in each group. Further information may be obtained from Ralph Gould, director of safety, motor vehicle department.

New Jersey (Camden)

During August of 1950, the accident and violation records of Camden, N. J., high-school students were tabulated with the following results.

	Number of students	Months of driving	Accidents		Violations	
			Total	Per 1,000 months	Total	Per 1,000 months
Men:						
Trained	101	2,088	9	4.3	9	4.3
Untrained	134	3,431	7	2.0	10	2.9
Women:						
Trained	18	436	0	0	0	0
Untrained	22	490	0	0	0	0

New York

The Automobile Club of New York, in cooperation with local school officials, obtained the names of 3,847 students in 43 high schools of the State. With the cooperation of the bureau of motor vehicles, the records of these students were checked. Since many students do not drive, they should not be included in a study of this type. There is no practical way of knowing whether or not a student drove and if he drove, how many miles he drove per year. Lacking any

better information, it may be assumed that students who obtained licenses were drivers while those who did not obtain licenses were nondrivers. On this basis, the cards for all licensed trained and untrained drivers were set aside for further study.

It is, of course, a known fact that many people drive without obtaining a license. In this instance, quite a number of unlicensed students (mostly untrained) had a record of violations and accidents. Cards for these people were also included in the group for further study. In the tabulation, figures for these accidents and violations are shown in parentheses. To make a fair comparison, cards for unlicensed persons who may have driven without violation or accident should also have been included, but this was impossible, since these people obviously could not be identified. For this reason, only accidents and violations of licensed drivers were used in computing relative rates. If the accidents and violations of unlicensed drivers were included in computing relative rates, then an unknown number of unlicensed drivers with clear records would also have been included.

School	Men		Women	
	Trained	Untrained	Trained	Untrained
Arcade	8	2	5	0
Avoca	1	3	0	0
Batavia	6	16	1	9
Bay Shore	7	7	4	0
Chautauqua	5	7	0	4
Corning	1	0	11	10
Brooklyn	15	19	0	0
Cortlond	11	19	3	4
Delhi	0	3	2	8
Dolgeville	0	4	0	1
Fayetteville	5	4	0	3
Floral Park	5	17	0	2
Glens Falls	2	17	2	3
Huntington Station	7	6	2	0
Jamestown	10	15	22	18
Katonah	5	6	15	2
Lake George	2	4	7	4
Kingston	4	11	1	2
Great Neck	29	25	0	16
Highland Falls	4	6	0	0
Kenmore	0	5	0	0
Liberty	3	10	0	0
Long Beach	5	16	2	8
Mamaroneck	10	22	12	25
Manhasset	8	17	10	31
Middletown	14	19	9	2
North Rose	1	3	0	1
North Tarrytown	9	10	3	5
Olean	5	9	9	4
Ossining	12	10	12	1
Patchogue	6	10	5	2
Port Jefferson	4	5	2	2
Port Jervis	5	6	6	1
Potsdam	5	8	2	4
Poughkeepsie	11	32	3	2
Saugerties	2	7	6	2
Smithtown Branch	3	5	3	0
Snyder	9	16	6	5
Suffern	4	11	4	1
Syracuse	3	7	1	0
Do	2	4	0	0
Walden	2	3	2	0
White Plains	25	41	13	40
Woodmere	4	5	2	1
Total	279	472	187	223

The following table summarizes the information obtained. Accidents and violations for unlicensed persons are listed in parentheses in addition to the accidents and violations for licensed person. Were these accidents and violations

for unlicensed drivers added, it would put the untrained drivers in a more unfavorable light.

	Number of drivers	Accidents		Violations	
		Total	Per 100 drivers	Total	Per 100 drivers
Men:					
Trained	279	38 (3*)	13.6	29 (4*)	10.4
Untrained	472	72 (22*)	15.3	87 (16*)	18.4
Women:					
Trained	187	13 (2*)	7.0	3 (1*)	1.6
Untrained	223	11 (1*)	4.9	6	2.7

*Figures in parentheses are additional accidents and violations involving persons never licensed or not licensed at the time of the accidents.

Ohio (Akron)

Mr. W. L. Newenchwander, supervisor of safety education, analyzed 2,458 accidents occurring during July, August, and September, 1950, and involving 4,700 people. Roughly 4,100 of these persons lived in Akron, and their ages were known. A special analysis was made of the persons in the 16- to 21-year-age group. For equal numbers of licensed drivers the trained men had only one-third as many accidents as the untrained men, and the trained women had one-fifteenth as many accidents as the untrained women.

	Total licensed drivers	Drivers involved in accidents	Accidents per 100 drivers
Men, 16 to 21 years of age:			
Trained	1,225	18	1.5
Untrained	5,975	271	4.5
Women, 16 to 21 years of age:			
Trained	2,310	5	.2
Untrained	790	24	3.0

An analysis was also made of a total of 2,288 drivers arrested for serious offenses during this same period. Of these, 293 were in the 16- to 21-year-age group. The trained drivers had one-sixth as many arrests per 100 licensed drivers as the untrained drivers.

During May 1950, a motor-vehicle inspection campaign was conducted. Of the 161 arrests made in this age group, only 4 involved trained drivers.

Men and women, 16 to 21 years of age	Total licensed drivers	Arrests for traffic violations		Arrests for defective equipment	
		Total	Per 100 drivers	Total	Per 100 drivers
Trained	3,535	23	0.65	4	0.11
Untrained	6,765	270	4.00	157	2.30

Ohio (Cincinnati)

A rather carefully controlled study was made by the department of research of Cincinnati (Ohio) public schools in an effort to compare the records of high-school students who had received (*a*) classroom instruction only with those (*b*) who had both classroom instruction and behind-the-wheel training.

Classroom instruction consisted of 20 period weeks given in grades 9 and 10. Behind-the-wheel training consisted of 5 hours behind the wheel and 5 hours of observation riding per week for 10 weeks in the dual-control car. The accident and moving-violation records for Cincinnati were searched for each student for the period beginning when the first license was issued up to February 1, 1952. Only chargeable accidents were included in the study.

Results are summarized in the following table:

MEN 16 TO 23 YEARS OF AGE

Group	Number of students	Months of licensed driving	Chargeable accidents			Moving violations		
			Number	Per 1,000 months	Driver involved	Number	Per 1,000 months	Driver involved
A	708	15,149	74	4.88	65	163	10.75	120
B	880	22,733	112	4.92	102	318	13.98	225
WOMEN 16 TO 22 YEARS OF AGE								
A	514	9,893	6	0.60	6	7	0.70	7
B	498	10,246	15	1.46	15	21	2.04	20

NOTE.—A, complete course; B, classroom only.

In summary, the results of this study indicate that (1) among men, behind-the-wheel training moderately improved moving violation records, but failed to reduce the number of accidents per 1,000 months of driving; and (2) among women, behind-the-wheel training improved both moving violation and accident records, although the sample was too small to make this conclusion reliable. It should be remembered that all subjects involved in this study had received classroom driver education.

Ohio (Toledo)

The safety education department of the Toledo (Ohio) public schools analyzed the accident records of several classes of students taking driver-education courses with the following results:

Class	Number of students	Exposure (years)	Number involved in accidents		Percent of group involved in accidents
			Men	Women	
1st semester, 1947–48	247	2	19	3	8.9
2d semester, 1947–48	240	1½	7	2	3.7
1st semester, 1948–49	235	1	10	3	5.5
2d semester, 1948–49	240	½	5	2	2.9

Some comparison is possible with untrained drivers from the following figures: During 1949 there were about 11,000 registered drivers in the age group 16 to 24 in Toledo. There were 4,442 accidents during the same period involving drivers of this age group, indicating that a large percentage of the drivers were involved. It should be remembered that this latter group is an older group than the trained group and probably has a higher percentage of males, which would account in part for the difference in accident records.

Oklahoma (Stillwater)

Driver education was installed in the school system during the 1946–47 school year. The local parent-teachers' association and police department made an

analysis of traffic accidents from 1946 to 1950, inclusive, with the following results:

Year	Students completing driving course during year		Number of drivers involved in accidents		
	Men	Women	All ages	16 to 19 years, inclusive	High-school students
1946			402	57	52
1947	26	63	377	51	40
1948	19	31	495	52	30
1949	43	72	568	74	2
1950	41	59	553	102	0

Apparently the high-school driver education program has been very effective in reducing the number of high-school students involved in accidents. Local civic groups, city police, and State highway patrols have all helped in this program.

Pennsylvania

Mr. T. E. Transeau, director of highway safety, recently (December 1952) completed an analysis of the records of 1,500 drivers trained in high-school courses compared with 1,500 who had received no such training.

All persons were 16 to 18 years of age and had obtained their licenses in 1950. The results are tabulated below.

	Number	Accidents		Arrests	
		Total	Per 100 drivers	Total	Per 100 drivers
Men:					
Trained	589	26	4.4	13	2.2
Untrained	1,096	109	9.9	84	7.7
Women:					
Trained	911	15	1.6	4	.4
Untrained	404	12	3.0	2	.5

It will be noted that for both men and women the trained drivers had about half as many accidents as the untrained drivers.

In the case of arrests, the untrained men had 3½ times as many arrests as the trained group. The number of women arrested for a traffic violation was too small to be of significance.

Pennsylvania (Dubois)

A survey was made of 165 students who had obtained a driver's license. Included were students who took a driving course in the 1949–50 and 1950–51 school years. The State department of revenue in Harrisburg and the local police checked the cards for each student for accidents and violations in September 1952. The results are briefly tabulated below.

	Number of drivers	Months of driving	Accidents		Violations	
			Total	Per 1,000 months	Total	Per 1,000 months
Men:						
Trained	51	1,286	0	0	4	3.1
Untrained	49	1,359	1	0.7	9	6.6
Women:						
Trained	60	1,315	1	.8	0	0
Untrained	5	145	0	0	0	0

Pennsylvania (State College)

The records for the 3-year-period, 1936–38, of 250 high-school students who had completed a driver education course were compared with an equal number of persons of the same age and approximately the same driving experience selected at random from the Pennsylvania files.

Drivers	Number	Number of accidents	Number of accidents where driver was declared legally at fault	Number of persons injured
Trained	250	5	2	0
Untrained	250	13	9	11

No information was given as to the number of boys and girls in each group.

Vermont

The motor vehicle department compared the records of 209 students who took a driver education course with 209 students who did not have the training but who received their licenses during the same year (1949). All persons included in the study were 16 or 17 years of age. No information was available regarding years of schooling or the relative number of boys and girls in each group.

The following table shows the number of drivers of each group involved in accidents and the number convicted for traffic law violations.

Drivers	Number	Number involved in accidents	Number convicted for violations
Trained	209	4	0
Untrained	209	29	10

A second analysis was made on January 1, 1951. At that time 515 persons had completed a driver-education course. Some had been licensed for 2 years and some for 1 year. The records of these people were compared with 515 junior operators who had not taken a driver-education course. No information was given as to the percentage of boys and girls in the two groups. The results are summarized below:

Drivers	Number of drivers	Drivers involved in accidents		Drivers convicted of traffic violations	
		1st year of driving	2d year of driving	1st year of driving	2d year of driving
Trained	515	12	7	2	2
Untrained	515	53	22	19	13

A third analysis was completed January 1, 1952. This covered 925 operators in each of the 2 groups. The results are summarized below:

Drivers	Total drivers studied	Drivers licensed for—			Drivers involved in accidents, years of driving			Drivers convicted of traffic violation, years of driving		
		1 year	2 years	3 years	1st	2d	3d	1st	2d	3d
Trained	925	410	306	209	23	22	7	9	7	2
Untrained	925	410	306	209	122	64	31	49	37	15

Wisconsin

In 1945, a study was made of the records of 2,500 students who had previously taken a high-school, driver-education course. Their records were compared with an equal number of the same age who had not taken a course. Names were chosen from selected counties throughout the State so as to obtain a cross

section of urban and rural drivers. The results indicated that driver education reduced accidents by 58 percent and convictions by 59 percent per 1,000 months of driving. No information was available as to the percentage of boys in the two groups compared.

During 1949, there were 69 fewer traffic fatalities among the age group 15–24 than during 1948. Among all other age groups, the reduction was only 4 persons for the same period. These figures refer to the ages of the persons killed, not to the ages of the drivers involved.

From 1948 to 1949, the number of drivers 15–24 involved in all accidents was reduced 17½ percent, whereas the reduction for drivers of all ages was 15 percent.

Wisconsin (Racine)

Under the direction of Dr. George W. Walter, an analysis was made for the period February 1947 through January 1950 of all students graduating from Washington Park High School and William Horlick High School. The following table gives the percentage of students obtaining licenses in each group:

Graduating students	Percent of drivers licensed	
	Men	Women
Trained	91.1	77.3
Untrained	87.8	37.4

Since sex differences are usually large, the records of boys and girls have been analyzed separately. The analysis was made of only those students who were licensed. The untrained boys had nearly 4 times as many accidents and 2½ times as many arrests as the trained group.

Men	Number licensed	Accidents reported		Arrests reported	
		Total	Per 100 drivers	Total	Per 100 drivers
Trained	164	15	9.1	27	16.5
Untrained	446	152	34.1	181	40.5

The table below gives the record for the girls. It will be noted that the untrained girls had twice as many accidents and also twice as many violations as the trained girls.

Women	Number licensed	Accidents reported		Arrests reported	
		Total	Per 100 drivers	Total	Per 100 drivers
Trained	343	12	3.5	4	1.2
Untrained	160	13	8.0	4	2.5

From the data available, it is apparent that in all groups the girls had a better record than the boys.

For equal sized groups, the trained boys had 2.6 accidents and 13.8 arrests for each accident and arrest reported for the trained girls.

In the case of untrained drivers, the boys had 4.3 accidents and 16.2 arrests for each accident and each arrest reported for the untrained girls.

Teaching materials available from local AAA clubs or the American Automobile Association, for high-school driver education courses include:

Sportsmanlike driving textbook: Revised third edition, copyright 1955, with many new features, including use of two colors throughout. Has five well-organized teaching units emphasizing sound driving attitudes. Contains 460 text pages, 24 chapters with projects and discussion topics, and 370 drawings, cartoons, and photographs. Two new chapters have been added: Action: In Cars With Automatic Transmissions, and Driving Under Unfavorable or Special Conditions.

Teacher's manual: A highly practical aid for instructors, prepared by educators and traffic safety specialists. Outlines teaching techniques and methods and is adaptable for any type of driver education course.

Project workbook: Contains many practical projects for student use—follows subject and chapter continuity of the textbook.

Standardized tests: Alternate written tests for each section of sportsmanlike driving and for final examinations.

Practice driving guides: Two series, 1 for gearshift and 1 for automatic transmission cars, outlining the steps developed in practice driving.

Psychophysical testing devices: Practical, easy-to-use devices to test skills and functions necessary in safe driving.

Mr. MARSH. Being a school program—I would like, Mr. Chairman, to emphasize that, if I may, this is a school program, and we have endeavored throughout our work to bear that in mind, and to hold our role to a proper role for a nonschool agency.

Being a school program, the basic responsibility for a driver education course must be in the hands of school authorities.

A complete course should consist of two parts: Classroom instruction and supervised practice driving.

We have here a little booklet dealing with the planning of such courses which I should like to submit, also, for whatever is the appropriate use that you should decide.

Based on experience with educators, the AAA recommends 5 classroom periods per week for a semester and 24 hours in the car for the average pupil, of which 8 hours are behind the wheel.

The importance of this course warrants its being a credit course, a credit course in the high school. Teachers should be certified by State education authorities. Students should take the course when they are approaching the age when they can get a driver's license.

An effectively planned and presented course in driver and traffic education should give a student these four attributes:

1. A good background of information, skills, practices, and habits needed for sound driving.

2. And this is extremely important—a sense of his social responsibility as a driver. And, I might ad, as a pedestrian, also.

3. An understanding of modern traffic requirements. And I think your consultant, Mr. Barnes, would agree with some of the rest of us who have been specialists in this field, that we would like to see more of the citizenry having a deeper and more thorough understanding of modern traffic requirements.

4. The ability and desire to help reduce traffic accidents.

A number of studies have been made to measure the results accomplished through high-school driver and traffic education courses. While results are not uniformly consistent, they all indicate that driver and traffic education very substantially reduces accidents.

That is not quite correct. There is one in there that does not. There is one, as I pointed out, there which was a small study. Perhaps the program was not as good as it ought to have been, but there was one.

One of the first and most complete studies was made in Cleveland, Ohio, where it was found that the trained high-school boys had only one-half as many accidents as their untrained classmates.

Since that time, some 30 studies made in several States confirm the results found in Cleveland. These are summarized in the AAA bulletin, Driver Education Proves Its Worth, which is the one you gentlemen were just looking at.

It would be extremely difficult to state exactly what such studies indicated as to lives saved and traffic injuries avoided. Statistical treatment of the data derived from these studies, together with traffic exposure and accident data from other sources, gives reasonable indication that nearly 3,000 lives may have been saved, and approximately 100,000 injuries avoided, due to the high-school driver education courses alone, which have been taken by some 3 million students during the past 20 years.

The economic saving represented in the traffic accidents of youthful drivers which have been averted by this program have been statistically estimated in the amount of some $300 million. And in supplement C in the material which we are submitting, and hope may be a part of the record, there is set forth a tabulation of this matter, and this has been carefully estimated and figured by our scientist, Mr. Earl Allgaier, who is here if there be any question concerning it.

We have been extremely conservative, we think. At the bottom of that tabulation in supplement C, you will notice that we have not estimated anything as to the merit of this program after 5 years, the point being that after some length of time those who have not had the benefit of such a program pick up by their own experience the information and the viewpoint and the techniques that they need, so that as a conservative basis we have estimated no value whatever after 5 years in making this estimate.

For the average high school installing a driver education course, the major items of cost are teacher salaries, vehicle operating expenses, and teaching and testing equipment. In a survey of 1,115 schools—and I hold a summary of this—made by the AAA in 1955, it was found that the cost per pupil trained was $33.32.

This was made in 1955. As you know, there have been some further devaluations of the dollar, and the amount would be somewhat greater now, but not greatly larger. This is based on 1,115 schools, not our estimate, but what they provided.

Mr. ROBERTS. If you will pardon me again, I might say, Mr. Marsh, under the bill I filed, I believe the figure that we used in estimating costs per pupil was $35 per pupil.So at least we are not too far away from the figure.

Mr. MARSH. I would say that your figure is better than this, because there has been, thank God, some further improvement in teacher salaries, and this figure, therefore, would be up, and I would say that your figure is better than this figure.

The major part of this total was for teacher salary, with the remainder going for cost of car operation, testing equipment and special teaching aids.

It is, of course, difficult to predict trends in this area. However, it may be of interest to note certain comparisons between the facts disclosed by this 1955 report and a similar study made by the AAA in 1953.

During this relatively short period, the average school's enrollment in driver-education courses increased by 10 students each year. That is the average school's enrollment. The number of hours of classroom instruction given by the average school decreased by 3 hours, and practice driving time decreased 0.6 hours. The total cost per student increased from $31.14 to $33.32, due largely to an increase in the average annual salary of driver-education teachers.

Although the cost of driver education per student is relatively small, the financial problems involved in any substantial expansion of these programs cannot be solved within the limitations of resources now available to school systems and cooperating nongovernmental organizations.

As a result, 9 States—we say 9; I noted last week one of your witnesses said 13, and I wonder where that discrepancy lies.

Mr. ROBERTS. I remember that, too, and I would like to have the results of your check.

Mr. MARSH. We will furnish that, because we wish to reconcile these two figures. I will read it as it is now.

As a result of that, 9 States have enacted legislation, and that is set forth in supplement D and a little bit about the legislation is provided in that supplement, which we would like to have made part of the record, if it is permissible—9 States have enacted legislation providing some measure of financial support for high-school driver-education programs.

In three States, appropriations are made from general State funds; the remainder utilize special funds or reimbursement of general funds, in either case obtained from the levy of additional fees for driver licenses or vehicle registrations. One State, California, uses a portion of fines collected from traffic violators.

Particularly significant is the 1956 Michigan law, which states that all persons under 18 years applying for a driver's license must have previously taken and passed a driver-education course and examination approved by the superintendent of public instruction. The public schools are required by law to provide driver education for all young people, whether they are in public, private, or parochial schools, or out of school.

For this purpose the State grants special financial assistance up to $25 for each student completing such courses. Revenue for this program is obtained by levying an additional fee of $1 on each driver's license and 35 cents for each chauffeur's license.

A summary of the basic features of all State driver-education laws is attached as supplement D.

In the remaining States where driver education is carried on without the aid of special funds or appropriations, courses are financed through the regular school budgets. However, recognition must be given to the fact that throughout all of these programs, the contributions of many nongovernmental organizations play their part, often in ways that are not precisely calculable in terms of money.

These groups include automobile manufacturers, automobile dealers and dealer associations, the Automotive Safety Foundation, insurance companies and associations, automobile clubs, safety councils, and others having an interest in traffic and safety.

FUTURE NEEDS IN DRIVER EDUCATION

Tremendous inadequacies remain to be taken care of in the overall program of high-school driver and traffic education before it can reach its maximum potentials. Both quantitative and qualitative improvements must be made.

In the first place, less than 50 percent of our high schools now offer such courses. Of the 2 million young people who annually come of driver-licensing age in this country, only one-fourth now receive high-school driver education.

This means that, while some 500,000 students are receiving this critical instruction, some million and a half who should be receiving it are not. The vast majority of the young people in this untrained group, approximately 1½ million, will appear behind the wheels of the powerful cars on our streets and highways without the benefit of high-school driving instruction.

Many schools which now offer the course are unable to make it available to more than a small fraction of their eligible students because of inadequacies in teaching staff, equipment, practice-driving facilities, and funds. Many students are on waiting lists—and I may add, Mr. Chairman, my son was one such student who could not get on the list at Woodrow Wilson High School here—many students are on the waiting lists for driver-education courses, and it is well known that, with our expanding populations, each year will see a larger number wanting this instruction without hope of receiving it.

Many high-school courses are incomplete, the deficiency being generally in the lack of practice driving. Many courses are set up and conducted on well below what are considered to be minimum standards.

Too many driver-education teachers are still insufficiently prepared with the special training needed to give a good course. Too many courses "miss the boat" because they are set up on the basis of merely preparing the students to pass State driver-licensing examination, and neglect to develop proper driving attitudes and social responsibilities.

And I should like to give the maximum emphasis that I can possibly give to that latter part, the neglect to develop proper driver attitudes and social responsibilities.

Every school installing a driver-education course faces the problem of finding areas for practice driving. This is not only a problem of obtaining space to drive, but also areas which can be equipped and marked in appropriate ways for effective instruction. Only about two-thirds of the schools offering practice driving in their courses now find themselves able to provide off-street areas for beginners.

I may add, we have developed a diagram how that may be laid out in a minimum of space; if you have any interest in that, we would be glad to furnish that, also.

Others must use barricaded streets, or streets or rural roads carrying other traffic. Provisions for proper training aeas will continue to be a problem, critical in some urban areas, and often difficult to overcome without considerable additional cost.

A major shortcoming in this field has been the lack of sufficient re- to give instruction to several students at a time, thus making it possearch directed toward improving the effectiveness of this program. While $15 million to $20 million are spent annually in giving instruc-

tion to youthful drivers, only a few thousand dollars are spent on related research.

This is a great shame, I may add.

Much of the research during the past several years has been devoted to comparing the driving records of the trained and untrained young drivers. Some research work has been done in the development and evaluating of similative training devices which will enable a teacher sible for a teacher to give instruction to more students per year at a lower cost.

And we would like to come back to that, if we may, in relation to Anacostia, where Dr. Williams will point out there has been a substantial improvement found through their tests over there.

While driver education has been generally accepted as one of the most effective means of reducing accidents, and also doing many other things, I may add, very little has been done by way of research to measure the effectiveness of various teaching methods now in use and which have been established solely on the basis of experience in the field.

A very limited amount of research has been done on such aspects of driver education as the effect of home-driving practice, the relative merits of taking 2 or 4 students in a car at a time, the effect of a course on a student's attitudes, and the interrelationship of various abilities and factors related to driving.

Particularly are there needs for research on such matters critical to the advancement of driver education as: The causes of accidents—the underlying causes, if you please; the instructional methods for improving driver attitudes, and again I would give great emphasis to that; vision and driving; and effective methods of testing for prediction of driving performance.

The ultimate objectives of a nationwide program of driver education for youths prior to their reaching the licensing age will not be realized until much more, carefully conducted research throws light on areas now not adequately understood.

Mr. Chairman, that completes my formal statement. If you would be able to give a moment to Dr. Williams, I would think you might find it beneficial, because he has actually been conducting these tests.

Could he take a moment?

Mr. ROBERTS. Yes, sir. We would be delighted to have that.

I might say, Mr. Marsh, do you present the material in the supplement for inclusion along with the main statement?

Mr. MARSH. Yes, sir; we would appreciate that being so received.

Mr. ROBERTS. Without objection, it may be incorporated in the record.

(The statement referred to is as follows:)

DRIVER EDUCATION IN HIGH SCHOOLS

Supplementary information accompanying statement of the American Automobile Association before the Special Subcommittee on Traffic Safety of the Committee on Interstate and Foreign Commerce, House of Representatives, June 10, 1957

SUPPLEMENT A

A summary of teacher preparation courses in driver and traffic education with AAA participation

Year	Basic courses	Teachers attending	Advanced courses	Teachers attending	Professors' workshops	Professors' attending
1936	1	36				
1937	11	274				
1938	15	461			1	13
1939	12	160			4	36
1940	9	173			4	39
1941	7	59			4	30
1942	5	44			2	13
1943	2	12				
1944	6	10				
1945	8	14				
1946	28	552			5	76
1947	53	1,428			5	39
1948	68	1,849			5	65
1949	61	1,749			5	68
1950	62	1,675	6	97	5	62
1951	50	1,246	8	141	4	35
1952	38	925	8	111	3	42
1953	39	1,011	13	164	1	10
1954	39	1,001	18	271	1	12
1955	39	941	23	422	1	14
1956	44	1,007	16	279	2	30
Total	598	14,627	92	1,485	52	584

One- and two-week short courses in driver and traffic education are offered to meet the needs of teachers who cannot attend longer courses. The AAA cooperates with colleges and universities in conducting about 50 of these courses for high-school teachers each year. The AAA aids such courses by arranging for a qualified instructor and paying for 1 week's salary and expenses, and by furnishing a complete set of text materials for each teacher enrolled in the course. Two experienced instructors carry on this work throughout the year. To meet the heavy demand for such courses in the summer, 15 part-time consultants are employed. These special instructors conduct driver and traffic education courses on their own college campuses during the regular school year. Many colleges, departments of education, and other educational agencies interested in sponsoring such a course contact the AAA.

SUPPLEMENT B

Growth in driver education program, 1936–56

School year (1)	Cars in use (2)	Persons trained (3)	Accumulated total trained end of year (4)
1936–37	3	450	450
1937–38	5	750	1,200
1938–39	25	3,750	4,950
1939–40	25	3,750	8,700
1940–41	50	7,500	16,200
1941–42	50	7,500	23,700
1942–43	10	1,000	24,700
1943–44	10	1,000	25,700
1944–45	10	1,000	26,700
1945–46	75	3,750	30,450
1946–47	1,500	75,000	150,450
1947–48	3,000	150,000	255,450
1948–49	4,000	200,000	455,450
1949–50	4,500	225,000	680,450
1950–51	5,500	275,000	955,450
1951–52	6,000	300,000	1,255,450
1952–53	6,300	315,000	1,570,450
1953–54	7,234	418,443	1,988,893
1954–55	8,079	467,925	2,456,818
1955–56	9,024	527,440	2,984,258

The figures in this table are estimates based on the best information available to the AAA from various sources.

SUPPLEMENT C

Estimated lifesaving and economic values of driver-education program, 1936–56

School year (1)	Estimated deaths had driver not been trained (2)	Lives saved (3)	Economic loss prevented during year (4)	Saving per person trained during year (5)	Injuries prevented (6)
1936–37	0	0	0	0	0
1937–38	1	0	0	0	0
1938–39	3	1	$5,000	$13	35
1939–40	5	2	100,000	27	70
1940–41	10	5	250,000	33	175
1941–42	14	7	350,000	47	245
1942–43	14	7	350,000	350	245
1943–44	12	6	300,000	300	210
1944–45	11	5	250,000	250	175
1945–46	8	4	280,000	75	140
1946–47	48	24	1,920,000	26	840
1947–48	136	68	6,120,000	41	2,380
1948–49	254	127	12,700,000	63	4,445
1949–50	386	193	17,370,000	77	6,755
1950–51	546	273	24,570,000	89	9,555
1951–52	678	339	33,900,000	113	11,865
1952–53	776	388	38,800,000	123	13,580
1953–54	830	415	47,000,000	112	14,525
1954–55	870	435	54,000,000	115	15,225
1955–56	1,030	515	60,500,000	115	18,025
Total		2,814	298,810,000		98,490

The figures in this table are estimates based on the best information available to the AAA from various sources. Savings are computed on the assumption, justified by numerous studies, that students who take a driver-education course have only half as many accidents for the first 5 years of driving as untrained drivers in the same age group.

SUPPLEMENT D

SOME FEATURES OF STATE LEGISLATION FOR DRIVER EDUCATION IN HIGH SCHOOLS

Delaware (1947)

Appropriates $50,000 biennially.
Program by State department of public instruction.

Pennsylvania (1952)

Funds from $2 increase in learner-permit fee, appropriated to department of public instruction.
Distributed at no less than $10 per pupil.

California (1953)

Funds from general fund, to be reimbursed by 5-percent penalty fee on moving traffic-law violations.
Distributed on basis of 75 percent of excess cost, not exceeding $30 per pupil.

Maine (1955)

Appropriations from general fund ($71,000 for 1956–57); $10 per pupil (who satisfactorily passes the course) during first year school offers driver education. Then computed on basis of teacher's salary—one-fourth the salary.
Standards, etc., subject to approval of the commissioner.
Set up State director of driver education.

Florida (1955)

Driver-education fund, set up from increased driver-license fees ($900,000 for biennium): Administered under direction of State superintendent of public instruction; distributed to county boards on basis of type of program and number or enrollees; standards prescribed by State board of education; up to 4 percent of appropriation for administration of act.

Louisiana (1955)

From State general fund ($250,000 for 1955–56): To $25 per pupil, or less on prorated basis, if necessary.

Michigan (1955)

Driver-education fund, from increased driver-license fees: Up to $25 per pupil (all enrollees, whether or not they pass the course), or less on prorated basis, if necessary; standards and regulations to be set up by superintendent of public instruction.
All persons under 18 years of age must have approved course before qualifying for operator's license.
Public schools must make the course available without fees to every person under 18 years of ago, private or parochial enrollees included, and out-of-school youth included.

North Carolina (1957)

Establishes driver-education fund. An additional fee of $1 added to motor-vehicle registrations exceeding $10.
Money in separate fund to be transferring periodically to State board of education for financing "driver training and safety education" in public high schools.
State department of public instruction will distribute funds to schools meeting standards established by the department.
No per pupil reimbursement figure stipulated.

Oregon (1957)

Authorizes any public, private, or parochial high school to conduct a course in automobile-driver instruction. Where such courses are conducted, they must include classroom instruction as well as instruction in dual-control automobiles.
Student driver-training fund created. Money received from an additional fee of $1 charged for operators' and chauffeurs' licenses or renewals.
Provides 75 percent of cost of course, with a maximum of $20 per pupil.
Limits administrative costs of act to $25,000 to any 1 biennium.

Illinois (1957—pending)

Authorizes school districts to offer driver-education programs.

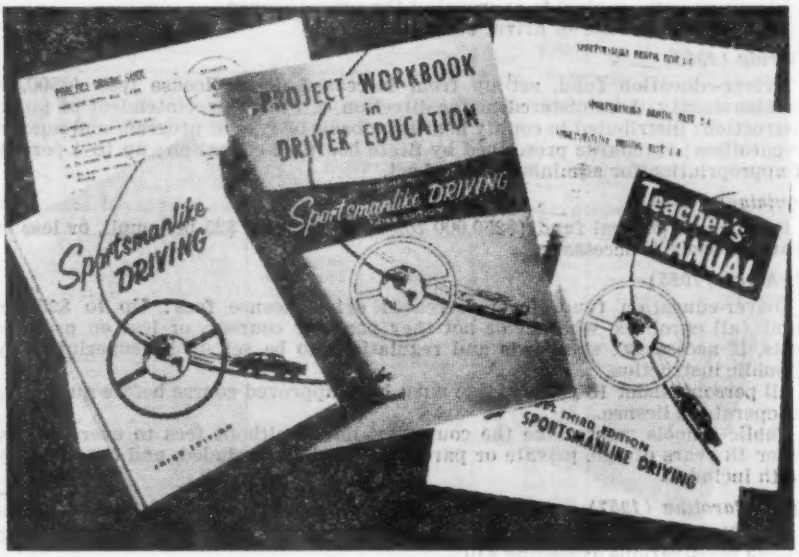
Where programs are offered, they must be made available to all public, parochial, and out-of-school youth between 15 and 21 years old.

Establishes a driver-education fund which will reimburse the school district at a rate not to exceed $20 per pupil trained. Money for this fund will be secured through and added levy of 66⅔ cents per year for an operator's license.

In order to qualify for reimbursement, the school must offer a course consisting of a minimum of 30 clock hours of classroom instruction and 6 hours of practice driving instruction in a dual-control car under direct, individual instruction. The superintendent of instruction may allow, in lieu of not more than 5 clock hours of practice driving in a dual-control car, such practice driving instruction as he determines is the equivalent of such practice driving in a dual-control car.

Planning an Effective Driver and Traffic Education Course—Suggested Program and Course Standards [1]

Prepared by traffic engineering and safety department, American Automobile Association, Washington, D. C.



Driver education teaching materials for use with sportsmanlike driving: a student project workbook; teacher's manual; driving guides, for both automatic and conventional-shift cars; objective tests, and answer sheets.

SECTION ONE. PLANNING AN EFFECTIVE COURSE

The average high-school student is very eager to drive a car. Even without a systematic course in driver education, he may know considerable about an automobile and something about traffic rules and traffic hazards. He may have had someone teach him the simple mechanical skills needed in starting, stopping, and maneuvering an automobile. He may do some or all of these acts in a creditable manner. But his behavior in complex and critical traffic situations is often another matter. His exuberant enthusiasm, lack of experience, and untutored judgment too often lead him into serious, or even tragic, traffic accidents. In fact, the poor traffic records of untrained young drivers prove that systematic education for driving must now be a serious concern of the public schools.

[1] An excerpt from the Teacher's Manual for 3d edition Sportsmanlike Driving.

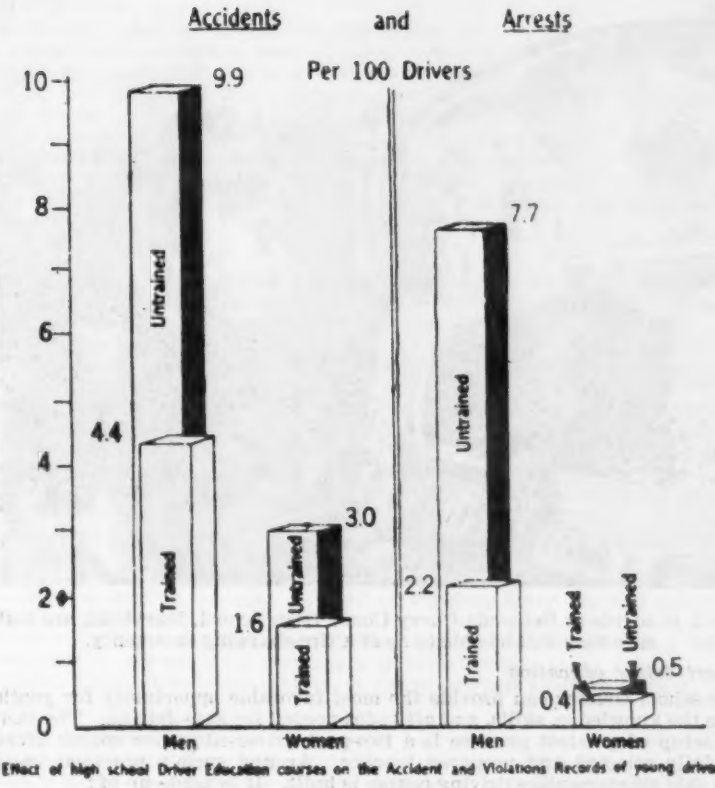


FIGURE 1. Nationwide studies have repeatedly indicated that young drivers trained in good high-school courses have far better driving records than young, untrained drivers.

Accident records of youthful drivers

While accident facts indicate that the average untrained high-school driver does not measure up to the demands of traffic situations as he should, they show also that young drivers who are trained in high-school courses of good quality have far better traffic records. Analyses of studies made in many States and cities of comparative traffic records of trained and untrained young drivers clearly indicate that complete, good-quality driver education courses reduce traffic accidents by about one-half. See Driver Education Proves Its Worth, American Automobile Association, 1955.

What drivers need to know

What do untrained drivers of high-school age too often lack? Many lack knowledge regarding the functioning, proper use, and maintenance of the safety equipment of their cars. Most of them are ignorant of the protective values of important traffic regulations. They often fail to understand accident causes and circumstances. Very few have developed the sound habits and practices required for safe driving. Even those who may have acquired adequate knowledge and skill may not be good "citizens of the road." They may think of driving as merely an individual pleasure rather than as a serious social responsibility. With faulty attitudes, they produce situations which cause emergencies and accidents. They frequently lack one of the most desirable qualities in a driver—sportsmanship.

FIGURE 2. Students at Bethesda-Chevy Chase High School, Maryland, are making sure they will be able to meet a tire-changing emergency.

Two-part driver education

High-school courses can provide the most favorable opportunity for youths to acquire the knowledge, skills, and attitudes needed for safe driving. The instructional setup of greatest promise is a two-part driver-education course given by a carefully selected and prepared teacher. Around such a practical two-part system this sportsmanlike driving course is built. It is made up of:

1. Classroom teaching.
2. Supervised road practice.

Both parts of the course are regularly scheduled in the school curriculum.

In the classroom work, young drivers learn:

What makes a good driver
Traffic laws and the reasons for them
The serious personal and social responsibilities of driving
The elementary principles of how an automobiles runs
How to keep the car in the best condition
How to protect pedestrians and how to be good pedestrians
Stopping distances at various speeds
Sound traffic practices
Sound driving under unfavorable and special conditions
Courtesy and sportsmanship in driving
Vocational possibilities in driving
What citizens should know about highways and traffic engineering

Out on the road, behind the wheel of a dual-control practice car, young people get actual road practice. They learn:

The parts of the car and their purposes
Smooth operation in starting and stopping the car
Skill in shifting gears or using the selector lever
Correct driving signals
Good practices in steering and braking
Best ways of parking, backing, making turns
Sound practices in following, passing, and meeting other cars
Proper use of lanes
Good driving habits, by doing right things from the start

After both parts of this two-part course are completed, each new driver takes tests to prove his driving skills and his personal fitness for driving. These tests should be much more difficult to pass than the tests given for licensing drivers.

General objectives

Some general objectives in this two-part course are:

1. To create a conscientious sense of social responsibility in drivers.
2. To set up standards for safe, sportsmanlike driving.
3. To equip drivers with the information, skills, practices, and habits needed for such driving.
4. To orient the driver and the pedestrian to this motor age.
5. To reduce traffic emergencies and accidents to a minimum.

The two-part course, as developed in this manual, is worked out to help the instructor achieve such objectives, with special and continuous emphasis on building sound attitudes.

Standards

Effective courses require high and definite standards to which both administration and instruction will conform. The following standards and principles are recommended for a two-part dirver education course.

For classroom instruction.—

1. Minimum time: Five classroom periods per week for a semester are recommended.
2. Teachers: Carefully selected. Interested in the subject. With above-average driving skill and teaching ability. Specially prepared in the content and methods of the driving course in teacher-preparation courses of high standards, and certified to teach the subject by their State certification agencies.
3. Students: Just under the age when they can, in their own State, secure a driver's license. In most cases, these will be 10th-grade students.
4. Class size: Small enough to permit maximum pupil activity, and yet so set up as to provide economy in instructional cost.
5. Equipment: A complete textbook and teacher's manual. Objective tests. Psycho-physical testing devices. Library of supplementary reading references. Driver education films.
6. Tests: Written examinations, objective test smore extensive and difficult than required by any State for securing a driver's license.
7. Credit: Credit toward graduation, on the same basis as other subjects in the curriculum.

For road instruction.—

1. Minimum time: A minimum of 24 hours in the car for the average pupil, of which 8 hours are behind the wheel. Individual differences in learning will require adjustments for fast and slow learners. Each student should h/ ve no more than 15 minutes behind the wheel for each of the first few lessons. This may be increased to 30 minutes in later stages of learning.
2. Teachers: Meeting the above standards for classroom work, and, in addition, specially prepared in the techniques of giving road instruction, by means of an adequate course with laboratory work and supervised experience in teaching driving.

Students: Just under the age for securing a driver's license in their State, and of legal age for holding a learner's permit. In most cases, these will be 10th grade students.

4. Practice groups: Groups of 3 or 4 pupils in the car at one time.
5. Equipment: A dual-control practice car. Materials for setting up practice streets, skill developing exercises, and driving tests.
6. Place: An away-from-traffic practice course for beginners; normal traffic environment for the later stages of instruction; carefully chosen times and places for instruction in driving under unfavorable or special conditions.
7. Protection: Adequate insurance protection for all concerned.
8. Tests: Diagnostic and skill tests. Tests of driving ability more rigid than those required by any State for securing a driver's license.

Variations in school programs

General plans for presenting driver education or traffic safety education vary among school systems according to needs, interest, and school facilities. Where driver education is taught as a special subject, the plan is usually one of the following:

1. A separate, full-semester course in driver education—with regularly scheduled classroom instruction, accompanied by supervised driving practice in a dual-control car. This is the plan which promises best results and is recommended.

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2. A separate course in traffic safety with classroom instruction only, usually offered for from 1 to 5 periods per week for a semester, or for 1 period per week for a school year. As a preparation for driving, this plan lacks completeness.

In some cases, traffic safety is taught as a part of a general safety course. Usually about 50 percent of the course time is devoted to traffic safety, and the remainder to other fields of safety.

Sometimes traffic safety content is correlated with other courses already established in the high-school program by means of adding it as a unit of work in an existing course.

These last two plans obviously fall short of minimum standards for a sound driver education course.

Scheduling driver education

Factors affecting scheduling vary so much from school to school that no single scheduling pattern can be recommended for driver education. Classroom instruction and practice driving should be offered concurrently wherever possible. Most experienced teachers report that they like to begin practice driving at about the time the psychophysical tests are completed. The following plans have been reported as practical for varying situations:

PLAN I.—*For 40 students per semester; repeat for 18 weeks*

Period	1st week					2d week				
	M	Tu	W	Th	F	M	Tu	W	Th	F
1st	Cl		Cl			Cl		Cl		
2d	A	B	A	B	A	B	A	B	A	B
3d	C	D	C	D	C	D	C	D	C	D
4th	E	F	E	F	E	F	E	F	E	F
5th	G	H	G	H	G	H	G	H	G	H
6th	I	J	I	J	I	J	I	J	I	J
7th										
8th										

Cl—Classroom: 2 periods per week or 36 per semester.
A, B, C, etc.—Behind-the-wheel practice groups of 4 each. Each student averages 8 hours behind the wheel and 24 hours additional observation in the car. Schools with 7 or 8 periods a day train 8 or 16 additional students.

PLAN II.—*For full-time teaching load; 36 to 60 students, depending on periods available; continue alternating groups for semester*

Period	1st week					2d week					3d week					4th week				
	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F
I	Classroom instruction 5 periods per week for 1 semester																			
II	Orientation projects; psychophysical tests; securing permits, etc.					1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
III						4	5	6	4	5	6	4	5	6	4	5	6	4	5	6
IV						7	8	9	7	8	9	7	8	9	7	8	9	7	8	9
V						10	11	12	10	11	12	10	11	12	10	11	12	10	11	12
VI	Additional periods for practice driving, as needed																			

1st week, preliminary work for practice driving. Numbers indicate driving groups of 3 to 4 students each.

PLAN III.—*For 12 students per class; repeated each period for new group of 12 students*

Week	Mon.	Tues.	Wed.	Thurs.	Fri.
1st	C1	C1	C1	C1	C1
2d to 9th	C1	A	B	C	C1
10th to 14th	C1	A	B	C	C1
15th to 18th	C1	A	B	C	C1

C1—Classroom work.
A, B, C—Practice driving groups. Based on a 1-semester course. 1 teacher, in a 6-period day, trains 72 pupils a semester, or 144 pupils a year. Extra time needed for car can be secured after school or in extra periods.

PLAIN IV.—*For 16 students per class; repeated each period for new group of students*

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1st	C1	C1	C1	C1	C1
2 to 9	C1	A	B	C	D
10 to 14	C1	A	B	C	D
15 to 18	C1	A	B	C	D

C1—Classroom work 5 periods 1st week, then 2 periods per week.
A, B, C, D—Car groups.
1 teacher can give the complete course. He can follow the work of each student, check progress, and give specific training where needed.

Monday—teacher sets up projects in topics under discussion.
Tuesday, Wednesday, Thursday, Friday—groups are in car with the instructor, other groups develop projects for class presentation on Monday.

PLAN V.—*Assumes a 7-period day. For 96 students—2 periods per week, in class; 1 period per week for car with 6 makeup periods. For 40 students—2 periods per week in class; 2 periods per week for car, with 9 makeup periods*

Period	Monday	Tuesday	Wednesday	Thursday	Friday
1	C1-A	C1-B	C1-A	C1-B	Extra makeup periods.
2	A-1	B-1	A-7	B-7	Do.
3	A-2	B-2	A-8	B-8	Do.
4	A-3	B-3	A-9	B-9	Do.
5	A-4	B-4	A-10	B-10	Do.
6	A-5	B-5	A-11	B-11	Do.
7	A-6	B-6	A-12	B-12	Do.

C1—Classroom, 2 periods per week A and B—sections.
1, 2, 3, etc.—Groups for car (4 students per group).

For either a 1- or a 2-teacher plan. One teacher can do all the classroom work and one all the road training, if necessary.

This plan allows flexibility in scheduling the car—as in vacant periods, or even after school hours.

Dual-control cars

All practice driving under teacher supervision should be in cars equipped with dual controls.

Dual-control cars for school use may be secured in several ways: by car loan, by rental from dealers, by school purchase, and by gift. The first-named method is the most frequently used. Such loans should be properly set up by contracts which carefully outline the responsibilities of all concerned.

To secure a car under the loan program carried out by the AAA, its affiliated clubs, and the participating manufacturers and dealers, the school must present evidence that the teacher, who will be given instruction in the car, has completed a teacher preparation course in driver education of at least 40 clock-hours, and is otherwise professionally acceptable to the State education department. In States where the State education department requires more than 40 clock-hours of teacher preparation in driver education for certification, the minimum set by the State will be considered to be the minimum required to secure a vehicle under this program.

See agreement for use of dual-control driver-education car, American Automobile Association, Washington, D. C.

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Mr. ROBERTS. We are glad to have you, Dr. Williams.

STATEMENT OF SAMUEL A. WILLIAMS, DRIVER-EDUCATION INSTRUCTOR, ANACOSTIA HIGH SCHOOL, WASHINGTON, D. C.

Mr. WILLIAMS. I am driver-education instructor at Anacostia High School, president of the Safety Education Association of the Washington, D. C., metropolitan area, and I am secretary of the Superintendent's Committee on Safety Education Subcommittee No. 9 on Driver Education, appointed by Dr. Corning.

I was asked to help Dr. Earl Allgaier to find a Link trainer to the automobile as the Link trainer was to the aviation industry. We call this the auto trainer. We have set up 4 auto trainers in a room, with a class enrollment of 15 limited with the trainer, 10 without the trainer.

I have given lesson plans to these students in the form of cards, where the detailed steps are used in teaching. We have used both the auto trainer and the dual-control car for the groups that are in the experiment. For the control group, we have not used the auto trainer.

At the end of the course, we have had a road test; we used the AAA road test, where each error was given a numerical demerit, and then it has been treated statistically by a man who did not conduct the

course. He is a State trooper, and he is in this work. He does not know which group had taken the experimental program and which group was in the control program.

There has been no substantial difference, as yet. The experiment has been going on for 1 year. It will be continued next year. I teach on the old method; 10 students a period, 5 periods a day. Ten times five is 50, and 2 semesters a year, 100 students. With these devices, I can certainly increase—I say 16. We have already increased 1 class to 16. Next semester, I am increasing 3 classes to at least 15, and I will keep 3 more at the standard size to confirm what we found this year.

In the District it is particularly useful that we have something like that, and I am going to talk just about the District, even though I know this is nationwide. We do not get our cars until the new models come out. Imagine a youngster coming into my class to take driver education faced with a textbook and a chair, and that is what we have for 6, 8, 10, 12 weeks in some instances. With these devices, we can get him at least behind the wheel, just to see if he can start the engine. And there is a regular automobile seat that has been made onto this now, so you don't sit in a chair.

There is a clutch pedal. It is a rheostat, but, so far as he knows, it is a gas lever. There is a steering wheel. It is not perfect. There are no emergency situations except you run into the curb. But the routines which we show for driving this auto trainer have been reduced to the identical routines we use in driving an automobile, and we can touch routines. We do not know yet whether we teach attitudes or not, but the first thing we do is measure the attitude of the student as shown by the Siebrecht attitude test developed by the New York University Safety Center.

I can tell you the results. There has been a noticeable increase in the attitude, change in attitude, toward what the experts call favorable. One hundred twenty-five experts in traffic safety composed these tests and rated them. We do not know why it has any value in showing attitude. Maybe it shows this driver-education program is serious, and it is more than just starting an automobile, guide it, and stop it. Personally, I hope I teach attitudes in the others, too, so I do not know yet what we will show.

With these routines, we can teach, and I tried it on one student only because I was not afraid of hurting her. I taught her every lesson on the auto trainer, took her out in the car, and kept quiet, and told her to pretend she was in the auto trainer and, "Now, I want to see you do that lesson here in the automobile."

She was successful, I would say, in all except starting on a hill. Starting on the hill, she rolled back and stalled the engine and could not understand why. Well, we didn't bother much with it. But I can teach the routines for proper starting of a car on this auto trainer.

Mr. ROBERTS. May I interrupt you there, Dr. Williams? That particular student, you say, successfully did drive on the first attempt on an automobile after she had had her driver training on the model displayed there?

Mr. WILLIAMS. Not only on the first attempt, but the first four. She went out in the car and was told to start the engine, and started it. She went out after being taught to drive in low; she went on

in low and stopped in low. She went on after the first four lessons, the first one being the safety gages and parts. She was able to make that transfer, and it is that similar.

Now, occasionally, I run into a student who did not get any feeling of movement, but that belt is an endless chain, and it continues to move. That was an exception. Incidentally, I do not take my word for this. I ask each one of the students at the end of the course to fill out a student-opinion scale, and that student opinion asks—I will not read it all—it asks the following questions:

Check those ways in which you believe the auto trainer helped you learn to drive.

It has nine things to check.

Check those ways in which you believe the auto trainer hindered you in learning to drive.

It has nine.

Check three major factors needed to become a safe driver that the auto trainer helped you to learn—

and we have alertness, sportsmanship, braking, signaling, use of clutch, control of car, use of accelerator, and I have all these listed.

Did the auto trainer help you learn to drive?

Ninety-six and some tenths percent of the people who took this said it did. Now, how much, we do not know.

My plea is that we expand the program of driver education. If it means more teachers' salaries, let's get more teachers' salaries.

I believe this trainer is more useful when the teacher is there to supervise. However, I used it three different ways. I taught these routines when I did not have the car, and I taught them to four students at a time. Had I had 16 of those, I could have taught 16 students at a time.

If you go to take typing, and you sit around to wait for the typewriter to get vacant, how do you feel about the typing course? You would not pay money of your own to do it.

There should be a trainer for every student in the class.

I also let the students become teachers. I put four students as students, and three as teachers. Then I went out into the car. I used student supervision, which I do not like and do not recommend. I do not recommend student supervision. I was able to do it because I had seniors.

Again, I do not recommend that seniors be given this course first. That is the policy in the District because that is our last chance to get to them. The time to learn to drive is just prior to becoming of correct age for driving. That is when you are most interested. This course should be offered to every student who wants it, just below the age of 16 or immediately upon reaching 16.

Mr. ROBERTS. Let me ask you this, Dr. Williams: With the tremendous lag in providing these classrooms and space that we are faced with in this country, I think perhaps some of the estimates say it will take $10 billion now to do the jab as it should be done and give students adequate, decent school-room housing, and with the fact that we all admit and know that practically all of our teachers are badly underpaid in many sections of the country, do you see any way that

this program could be expanded as it should be expanded without some help from the Federal Government?

Mr. WILLIAMS. It is not going to be possible to expand it to meet the need without help from the Federal Government. We have in the District, I believe, 14 teachers teaching in 16 schools. Well, certainly we might be able to get two more salaries, but then we find ourselves short of automobiles.

This year, and I am not being critical of the District, but these are facts, this year I had to lend my car 2 or 3 different occasions to another school which did not have a car, so by pooling our cars we were able to supply cars.

We need to buy cars. Why should the District—I do not want to cut the dealers out, either. Let's do both. Let's let the dealers who want to furnish cars, furnish cars. But let's buy cars for schools that do not get cars. And without Federal aid, we are not going to do it in the District.

Mr. ROBERTS. Is it not true that according to some people, this group we are talking about are involved in about 27 percent of the fatal accidents on the highways of this country? Either they get killed or kill someone? Will it not run that high?

Mr. WILLIAMS. I have read every one of the studies conducted, and there is now a study being made of the studies to see how scientifically they were done.

One study shows in one State not just 50 percent, but 9 times more accidents on the part of the people who had not had driver education in that high school, than those who had had driver education.

We have been lucky, of all the headlines of multiple deaths, not a single one over in Anacostia, not a single one has been a former driver-education student.

Something more important than that, if my memory is correct, 9 out of 10 pedestrians who are killed are people who do not know what a car can do. Nine out of ten pedestrians who do not drive automobiles.

You cannot say, "The light is red. You can't hit me." A car that is so close cannot do anything about it, no matter who the driver is. There is a physical impossibility involving the braking time and reactions.

Double your speed, you square your braking distance, no matter whether you have power brakes or not. That is another mistaken conception. Power brakes cannot stop a car. It can lock the wheels, but so can hydraulic brakes. Any little 98-pound girl can step on the brakes sufficient to lock the wheels, but she cannot stop the car.

The only way she is going to stop the car is control that speed.

I do not agree with my colleague from Florida. I would not drive a car with a governor on it. There are times when power is more useful than brakes in avoiding accidents, and the skillful and intelligent use of power is what we want.

Education is the answer. These 40,000 people that killed themselves did not do it on purpose. And it is not just these 40,000 we are talking about. It is a different 40,000 every year.

Driver education should be a required subject of every student who drives an automobile.

I have here the results of the experiment. I did not want to read it, but I will read two paragraphs.

Experimental data concerning the effectiveness of the Auto Trainer are at present rather limited. During the past year, four trainers have been used in an experimental study at the local Anacostia High School. A control group of 38 students received an average of slightly over 6 hours behind-the-wheel practice in a car only. The experimental group of 71 students received an average of 4 hours behind-the-wheel and 6.6 hours practice on the Auto Trainer.

Both groups did equally well on the road test given at the end of the course. From these preliminary figures it would appear that 6.6 hours on the Auto Trainer is equal to 2 hours of practice driving in a car.

The experimental study will be continued next year. The instructor intends to train 10 students and increase to 15 per period, and I am going to take on an extra period and see if I can establish that with the Auto Trainer making my load 6 periods a day instead of the customary 5.

That will cut the costs per student for the course, using the Auto Trainer, 50 percent.

Mr. ROBERTS. Thank you very much, Dr. Williams.

Mr. Bush, do you have any questions?

Mr. BUSH. Yes, I would like to ask some questions.

First I wish to commend you for the good work you are in, and it is one we must all be interested in. But certainly there is no one who has these accidents that intentionally has them. Is that correct?

Mr. WILLIAMS. I think that is correct.

Mr. BUSH. They do not want to have accidents.

Mr. WILLIAMS. They think they can do things that are physically impossible.

Mr. BUSH. As a result, they are not anticipating what might happen ahead of them or at the intersection.

You have stressed the education feature in our high schools, which is fine. But after they leave high school, after they get out on their own, then what is going to be their attitude or what is going to make them conscious of the fact that they can still have accidents?

Mr. WILLIAMS. I am going to try to answer that statistically with insurance figures.

Maturity takes place somewhere, at different ages, but somewhere, statistically, at about 25, in that actuarial figures have shown that insurance companies will give you a preference rate then.

Also, when you get married they will give you a preference rate. When you have a child they will also lower your rate.

The group the insurance companies do not want unless they have had driver education is the group under 25.

Now, most of our students finish high school at about the age of 18. That still is enough time for several accidents.

Mr. BUSH. When you finish with your driver education, your people in school, do you feel that you have left with them an impression that they are going on the highways and just not be careless in their attitude and respect for others on the highways, that they are going to be greatly benefited?

Mr. WILLIAMS. If you will pardon a personal reference, I not only do that; I change their whole life. I help them teach their dads. I help them teach their boy friends. I help them create an attitude of

responsibility. They draw correct routines. They write the traffic laws. Every student in my class does work which he is not required to do. You get no homework in a half-credit course, incidentally. I recommend that they do get homework, and they get full credit. But that is not the case in the District.

And I tell them not to try to teach their dad. He is a little old and stubborn. But show him the notebook where the correct right turns, the correct traffic laws, the force of impact increasing from falling off a 1-story building at 20 miles per hour to falling off a 9-story building at 60 miles an hour. He will get that if he doesn't already know it. This represents what I call attitude, good attitude.

Furthermore, we measure the attitude at the end of the course. Almost without exception—we had two exceptions; I do not know what I did to them. We had two that had a worse attitude at the end of the course than they had at the beginning. I cannot understand that. I am ashamed of it, and I apologize for it. I will talk to them if I see them again. But our records point with pride to the change of attitude that does take place in an 18-week period.

Again, I recommend the full 18 weeks, because, while you have the student—remember, the driver-education teacher is in a very strategic position in the school to cast an influence if he is properly trained and has a wide enough background. Every student wants to take it. Whenever somebody is doing something that you want to do, you are more likely to listen to him. The football coach is in a wonderful position to influence attitudes if he will quit trying to win games and make a name for himself.

Mr. BUSH. Do you not think that, following through, there has still got to be more community work done along the line of, perhaps, voluntary work or some kind of programs put into effect which will help to make people more conscious of having accidents?

Mr. WILLIAMS. I certainly do. It is going to take all that we can all do.

Mr. MARSH. Mr. Chairman, may I respond to that point for a moment?

We, of course, do not in any way feel that drivers and traffic education alone in the high school is a complete answer to our problem. In the long run, we think it is the most promising one. But we feel very strongly that there need to be more improvements in the program with those who have passed that age.

There is a great growth in refresher courses, in checkup courses, in clinics, driver clinics, and in various other types of programs which will help make the adult drivers do a better job of driving. These are roughly ground into what is known as a driver-improvement program, and the people who have been studying the problem to which you referred, of what to do about the older people who are past high-school age are, I think, giving much emphasis to this, and we, too, are.

We have a policy on it which is in favor of that sort of a program, and we think very strongly that there is great need to have an improved kind of program for those who have passed high-school age. It takes various forms, but there are several different forms, and most all of them are good. We think that is very important.

Mr. ROBERTS. Will the gentleman yield to me?

Mr. BUSH. Yes.

Mr. ROBERTS. Mr. Marsh, do you not really think, if we are going to really do anything with this business of training, that we have got to start with our young people?

Mr. MARSH. Oh, absolutely.

Mr. ROBERTS. We are not going to get anyplace with people who have been in the rut for years and years, and a man who is already settled and mature, you just simply cannot get him to retrain. He is not going to do it. He will give lipservice to it. He will go to the luncheon club and applaud the speakers, and all that. But, actually, it seems to me that the crux of this whole thing, if we are going to get into it, is with the young people. They are the ones who can start out right, and it seems to me that this business of talking about training adults, it may be all right for those who find themselves in the clutches of the court and they have to do it, but you are not going to find many people who are going to try to train again.

They will say, "Well, I learned this this way; I have been doing it this way for 25 years, and never had an accident." And yet he may be the worst driver in the community.

It would seem to me you are just not going to get anywhere unless you start with these youngsters.

Mr. MARSH. Mr. Chairman, I think you put your finger on the most important point. I might state it just a little bit differently, and that is, in the upcoming group, you have a readymade populace which could be nearly a total populace coming through, and you have this tremendous eagerness, it is a terrific eagerness, on the part of almost all of these young people to drive, and, therefore, they are particularly ready to accept instruction and ideas and understandings. And these, therefore, can serve, in the long run, much the best. So that I think your point is extremely well taken.

On the matter of the possibility with older folks, there are records which show you can get somewhere, but your point is very well taken. There are a mighty lot of them who will not easily subject themselves to the thing which they, perhaps, ought to do.

Mr. ROBERTS. Do you not think Dr. Williams had a very good point when he illustrates the fact that the youngsters will take this message home? I think we are all the products of what our children want us to be and what they want us to do, and, if we can get our young people sold on driver training and driver education, they will reach the parents. I think, undoubtedly, they will have a lot more influence with them than any other medium that I know anything about.

Excuse me, Mr. Bush.

Mr. BUSH. That is perfectly all right. I certainly think that it is very essential to get them started at a young, tender age. It is much easier for a person to learn to ride a bicycle when he is a youngster than it is when he is 60 years old, and has never ridden one. So I am very much in favor of the training. However, this great slaughter that we are having throughout the country, it just seems to me that—can we wait long enough until these youngsters grow up? That is the thought I am trying to bring out.

Mr. WILLIAMS. Mr. Chairman, could I say something?

Mr. BUSH. We want to stop some of it if we can.

Mr. ROBERTS. Yes.

Mr. WILLIAMS. Could I say a word on the move in the District?

This is my best judgment, and I represent no one besides myself. We need more money for more salaries. The automobile which I have sets out there unused every day I give a lesson in the classroom. It sets out there during my lunch period. We have three lunch periods. By staggering our lunch period, that car could be used both lunch periods.

It is not used in the evening after school because I am too tired. I give 1 or 2 lessons after school in the evening to the ones who particularly need it. I give 1 or 2 in the morning to someone who was absent.

I give 1 or 2 after my lunch when I am finished, but by that time I am too tired to teach anybody else.

If we had 2 teachers, 1 who, say, taught all the theory at a certain time, even with 1 car we could do at least 33⅓ percent more teaching.

So what I want to see is an expansion of this program in any way it can be expanded. Let's teach more.

Mr. BUSH. I think you should be commended for the interest you are showing and the fine work you are doing, and I just hope that something can be done to increase it in some manner so that we can me more effective in cutting these accidents down, because we are having too many.

I do a lot of driving. I am on the road a lot, and you just see some reckless, careless individuals behind that wheel, and sooner or later, if they keep that up, they are going to get themselves in trouble.

What plan can be adopted to correct a lot of those? And many of them are the ones that are causing the trouble.

Mr. MARSH. Mr. Chairman and Mr. Bush, I might say Dr. Williams has kindly expressed a willingness, and our group would certainly be eager to help if we can, to afford your committee, if it should have an opportunity to do so, the chance to actually see how these work over at Anacostia; and we would be very glad to arrange the transportation, if it would help any, to actually see it, try it out for yourself and see for yourself what it is like, and right on the spot.

Mr. ROBERTS. Well, we appreciate your invitation, and I am sure that sometime when the subcommittee and staff can arrange it, we would like to come out and see the work you are doing, and I want to thank you very much for your testimony.

Mr. Bush, do you have any further questions?

Mr. BUSH. I just want to say that the youngsters at this age do respond to this training much faster, they are quicker and their reactions are a lot faster than elderly people. I remember, Mr. Chairman, 40 years ago I was assigned the job of teaching our minister to drive a car. He was then about 50 years old. I think that was one of the hardest jobs I ever had to do in my life. But I could not get him to keep his speed down, and it was speed that was causing his trouble.

And I am very fearful that is what is causing a lot of our trouble today.

Mr. WILLIAMS. That is one of the values of this. You can learn the proper use of the accelerator where anything serious can happen. You see, it is a psychologically established fact that when you get excited or angry, you press down on whatever you want to.

I guess your wife stamps her foot, and if it is on the brake they are going to stop suddenly. If it is in the back seat, they are going to

press against that. If it is on the gas pedal, they are going to press on that. I am quite sure I can teach them out of that, because this makes a terrific roar when you press down.

But I know what your problem was in trying to teach a 50-year-old man to drive.

Mr. ROBERTS. Mr. Williams, before you leave, a member of the staff of my office handed me this copy of a magazine, and since you have contact with so many of the young people, this is a very, I might say, it is a little bit on the shocking side, but we are dealing with a subject that contains many aspects.

This has a picture of a young man with a crew haircut, and his letter he won in football or some other sport, on his jacket, 18 years old, and a picture of the White House over his left shoulder, and I am going to take the time to read this. Its title is "Obituary." It says:

> The President died yesterday. He was 18 years old. The people of this Nation are not aware of their loss. Only a local newspaper carried the report. The people will never know the void created by his death. They will never read the newspaper accounts of his election to the Presidency. That event would have occurred in 1988. The world will never honor the shrine erected to the memory of this man who would have led humanity to lasting peace and international understanding.
>
> And we who are left behind ask why? He had everything. Nothing was being spared to make his education complete. He was taught the rules of good behavior almost as soon as he could talk. Later, as a young man, he took music lessons and all of those other things to polish the social graces which should make him acceptable in polite society. He played football and basketball and spent long hours in practice and study so that each play, each motion, was perfect.
>
> This habit of practice and more practice, careful coaching and teaching, was an essential and integral part of his life, in his schoolwork and religion and in play.
>
> Of course, all of these things were taught in part by his parents, but they recognized that he should have training by experts, by others who are qualified. They recognized these teachers were essential to give this bright-eyed lad the type of direction and help which would life him out of mediocrity.
>
> In the driving of an automobile, I guess no one thought of that. He patterned his driving on what he saw others doing, people like his dad, who never had an accident. I don't know why he didn't because sometimes he drove a little fast, and sometimes he just slowed down for a stop sign. And he had been known to pass another car at an intersection. Not really bad driving. Never had an accident.
>
> The lad only made one mistake yesterday. He did not have his dad's good luck. He had an accident. The President died yesterday. He was only 18 years old.

That is what is happening on our streets and highways throughout the country.

So I have been interested in a proper program of driver training.

The House is in session, and there is a quorum call. I am very sorry we did not get to hear from the NEA executive, Mr. Norman Key, but we will do our best to get you back here at our next meeting.

You are in Washington, are you?

Mr. KEY. Yes, sir.

Mr. ROBERTS. We will be in touch with you, and we appreciate your coming. I am sorry we could not get to you.

The committee will stand in recess.

(Whereupon, at 12:20 p. m., the subcommittee adjourned, subject to call.)

DRIVER EDUCATION

MONDAY, JUNE 24, 1957

HOUSE OF REPRESENTATIVES,
SPECIAL SUBCOMMITTEE ON TRAFFIC SAFETY,
OF THE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D. C.

The subcommittee met at 10 a. m., in room 1334, New House Office Building, Hon. Kenneth A. Roberts (subcommittee chairman) presiding.

Mr. ROBERTS. The committee will please come to order.

This morning the Special Committee on Traffic Safety of the House Committee on Interstate and Foreign Commerce is meeting to complete its hearings on H. R. 5416, legislation to provide the States Federal funds in order to provide driver-training programs.

Our first witness this morning will be Mr. Norman Key, secretary of the national commission on safety education of the National Education Association, who will speak on the driver-training bill, H. R. 5416.

We are very pleased, Mr. Key, that you were able to return and be here again this morning to present the views of the National Education Association, which will complete the hearings on driver education and its relationship to traffic safety.

STATEMENT OF NORMAN KEY, SECRETARY, NATIONAL COMMISSION ON SAFETY EDUCATION, NATIONAL EDUCATION ASSOCIATION

Mr. KEY. Thank you, Mr. Chairman and members of the committee.

I am Norman Key, of Washington, D. C., secretary of the national commission on safety education of the National Education Association of the United States.

Before going further into this formal statement, I want to repeat the commendations we have expressed before to you, Mr. Chairman, and to the committee, for your interest in this whole program, the whole program of traffic safety in the United States, and now, particularly for your interest in this bill and your sponsoring of this bill for the education necessary for furthering this traffic-safety program. Our purpose here is to help in any way we can to make this a useful thing to the program of education, and we speak as people in the field of education who have studied this program, and have studied it in the light of the overall program of education in the State and local school systems.

Mr. ROBERTS. I would like to say to you, Mr. Key, that we certainly appreciate your remarks, and I want to say, too, that you have been very patient about this hearing. I think this is the third or fourth time you have been present to make this statement, and I regret very much we have been so long in hearing from you. We are very happy to have you here today, and appreciate the interest that you have shown in this problem, and certainly appreciate your persistence in the matter.

Mr. KEY. Thank you very much. With your permission, I would like to comment here and there in addition to the material that was written and which I believe you have before you.

The national commission on safety education is a service unit operating within the structure of the National Education Association, which has a membership of over 700,000 professional educators. The NEA has a long and continuous history in the general field of safety education, a field which includes traffic-safety education, and, more specifically, driver education.

More explicitly, the commission which I represent maintains an official relationship with the membership of 32 State associations of professional driver and safety educators, representing more than 6,000 individuals who are actively engaged in driver-education programs and whose daily endeavors will be influenced by this or any other legislation in their field, that is, in the field of education for traffic safety. Consequently, the testimony which I have prepared has been developed with the object in view of analyzing H. R. 5416 in terms of the technical, educational, and/or administrative problems which might be involved in its application, its implications for educational best practice, and established, basic educational principles.

May I state firmly that the commission is thoroughly aware of the problem of financing public education in general and driver education specifically. We have been gratified by the increasing measure of financial support which driver-education programs have been receiving within the several States. Prior to this legislative year, seven States, Delaware, Pennsylvania, California, Maine, Florida, Michigan, and Louisiana had established State subsidies for driver education. So far this year, five more States, Indiana—and I beg to make a modification at this point, sir. I had information that Illinois was included in this group at the time of your hearing last Monday. We checked back last Monday and find that it has not yet reached the Governor, but it would be interesting, I think, to include the information that the Governor is sponsoring this bill in Illinois and it has no opposition thus far, and as of last week it was in the third reading in the Senate, having passed the House already. Indiana, North Carolina, Oregon, and Utah already have passed and have in effect such laws. In 11 additional States, legislation of this type has been introduced since last January but failed. And there is every indication that these States, and still others, will make similar attempts at subsequent legislative sessions. It should be added that since the inception of driver education about 1933, a constantly increasing number of State and local school systems have paid certain basic costs of driver education, such as the salaries of full-time or part-time teachers, from their general education funds. So I think this is an indication that driver education is in the school systems and accepted by school boards and school officials.

The case for legislation providing special financial subsidies for driver education is made on the grounds that more rapid expansion of the program is needed, and that the practice driving phase of the instruction is considerably more expensive than purely academic high-school subjects.

Now, with these facts in mind, I would like to discuss certain aspects of H. R. 5416. I shall take these in sequence as they appear in the bill, and I would like to make a reference to the definition of this program as it is used in education today. I mention this not for the purpose of editing at all but for the purpose of helping to make the term as uniform as possible so that we know what we are talking about nationwide when it is mentioned. The last national conference held in 1953—these national conferences include educators and people from these national organizations, many of whom have testified before you—agreed on a definition and a title. They called it driver education and they defined it as those programs of learning in schools which enable people to use the streets and highways more efficiently; and they urged in this conference that we try to adopt for uniform use the term "driver education." I suggest, therefore, that the bill use that language. I might mention that in a couple places "driver training" is used instead of "driver education," while for the most part you do say "driver education."

1. In section 3 (2) we find "The term 'Secretary' means the Secretary of Health, Education, and Welfare." We would like to suggest the substitution of "The term 'Commissioner' means the Commissioner of the Office of Education." It is our feeling that an educational bill should be administered by an educational agency and that this should be so specified in the legislation.

2. Section 4. (b) reads, in part, "salaries and necessary travel expenses of teachers, teacher trainees, etc." We question the wisdom of including teacher trainees in this provision. In the first place, we are concerned with the public policy implications of publicly financing what would seem to be the "entire" professional preparation for educational specialization for a selected or designated group of teachers. In other words, this as written might very well mean acquiring a degree unless it was interpreted further. I might say the aid to in-service training, conferences, institutes, and such as that, would seem to be in keeping with practices in the States generally. In addition, we fear that such a practice would create administrative problems through the disrupting effect on the morale of school staffs. A continual problem of driver educators is securing acceptance and recognition from the more traditional subject matter teachers. This provision would hinder this recognition and acceptance. This is true in any program that is introduced into the school systems. It has been true in the past in the case of vocational education and other programs. A newcomer has some difficulty gaining recognition. This provision would hinder this recognition, as we see it, and that is based on our observation in similar fields.

3. Section 5 (a) reads, in part, "designate or create a State board * * *." We would favor changing this to indicate that the administration of the provisions of this act on the State level be through the "State educational agency." While not all States have a State board of education, all do have an educational agency. Such a designation would preclude the possibility of setting up an addi-

tional and duplicating agency. Might we note, in passing, that this is the terminology used in other educational grant-in-aid bills including H. R. 1, the school-construction bill.

4. In section 5 (b) we find, "Such plan must provide that driver education shall be given in schools or classes under public supervision or control * * *." Admittedly, there is an implication here of a highly controversial topic. As we read this, the question as to whether or not students of nonpublic schools would or would not be eligible to this educational program offered by the public school is not clear. To the extent that this is not clear, we would foresee problems in the administration of the program at the State and local level.

5. In section 6 (b) we find, "Appropriations for salaries of teachers of driver education shall be devoted exclusively to the payment of salary for such teachers * * * " and in section 7 (b), "Not more than 5 percent of the amount appropriated in any year for each of the purposes specified in section 4 (a) shall be used for the purchase or acquisition of equipment." There is implicit in these two provisions the crux of the problem of increasing the scope and quality of driver education as our experience has led us to believe.

First we would raise the question as to whether Federal financing of the salaries of a special group of teachers is good long-range public education policy. The effect could be one of splintering, or fractionating, professional groups. Concommitantly we can foresee attendant administrative controversies arising from a confusion of responsibilities in terms of Federal, State, and local levels of programs.

In the second place, our experience—and it is one constantly reinforced through our active association with driver-education teachers and program administrators—is that the equipment item is the greatest single financial obstacle in the expansion of the program. To be more specific, most local school units, operating under programs of State subventions, find that financing and staffing the classroom part of driver education is far less of a problem than that of procuring, maintaining, operating, and insuring motor vehicles. Even in the case of cooperative programs wherein dealers furnish cars, the cost of operation, and additional needed equipment are considerable. Further, there is increasing evidence that such arrangements are resulting in a mounting financial burden to those dealers. And, in addition, the administration of a cooperative car program often encounters delays in procurement which work to the disadvantage of the educational program.

And may I cite the District of Columbia school system as an example, where last year no cars were delivered from the dealers until late in the fall. Schools had been underway 3 or 4 months, thus the youth taking the course were not able to have the practice driving phase of the program. I believe 4 cars were delivered in November and a few others—I dare not say how many, but the school session was completed and there were never enough cars for even 1 car in a school, and even 1 car in a school, as large as they are in the District of Columbia, would be far less than are needed. So here is a serious bottleneck.

Thus, we recommend the designation of the major portion of the appropriation, particularly as a subsidy for driver education cars and other necessary instructional equipment. We further recommend that payment of teacher salaries be left to the States. And may I add again that this would be far less controversial, to provide the equipment needed for carrying out such a program, thus expanding and increasing the driver-education program, instead of making the appropriation or subsidy available for teachers' salaries, which ultimately would create controversy at all levels.

6. And finally, in section 8 (b) reference is made to "reimbursement for expenditures already incurred to such schools and other organizations." "Other organizations" introduces a note of ambiguity. We doubt that organizations other than school systems should be eligible for Federal funds appropriated for driver education.

Mr. Chairman, may I express our appreciation for this opportunity to bring before your committee what we believe to be the best thinking of those most intimately associated with driver-education programs in the public secondary schools and which incorporates a considered judgment as to what factors, in the long run, will be of greater value to driver education.

Mr. ROBERTS. Thank you, Mr. Key.

I want to say that while you have pointed out many objections on the part of your organization to the bill, that I take those objections and suggestions as being very helpful.

Mr. KEY. May I interrupt you, sir, and say that this is not a position for nor against the bill. We think the principle is fine, and I repeat the commendation for your interest and work in this program.

Mr. ROBERTS. I might say to you that of course this is pioneer legislation as far as this subcommittee is concerned and, speaking for the chairman, I certainly approach it in an attitude of trying to find out what is the best answer, and I have no firm ideas in this field other than the fact that I am, of course, quite interested in seeing the program expanded, but I do not want to see it expanded except along the lines that there will be no interference with States rights in the field of education.

And I might say, too, that I feel that perhaps in this bill it may appear that we have attempted to set apart as a separate department this program of driver education, and I think you have been very helpful, certainly to the subcommittee, in pointing out that if this program is to obtain the acceptance that we all hope it will have, that it would not be wise to make this a separate field, but let it fit into the other part of the curriculum that are traditionally parts of the educational system.

Mr. KEY. Yes, sir.

Mr. ROBERTS. I might say I am not too clear on one of your objections, where you say the question as to whether or not students of nonpublic schools would or would not be eligible to this educational program offered by the public schools is not clear as the bill is now written. I am not in a position now to say what my position would be, except that I thought only the public schools were to have these

funds. As we go along there might be evidence to make us change our minds on that.

Mr. KEY. You will note I did not suggest the answer here, either. I do not know what the answer is, but it is an important thing.

Mr. ROBERTS. I think we would have to know a little more about the State programs in the various States to know how the Federal program, if we do go into it, would be proper and fitting.

There is one other feature that I am quite concerned about, and I wanted to ask you one question about the question which you raised in section 6 (b). I would take it from your statement that you feel that no part of the salaries of teachers of driver education should be paid by the Federal Government, but that you feel that the greatest hurdle we have to get over in this field is that of equipment; that we would perhaps be getting into trouble if we attempted to pay any part of the teachers' salaries in this field.

My question is this: In the administration of the Smith-Hughes Act, with which you are familiar, are the teachers under that program recipients of any Federal money at all?

Mr. KEY. Yes; they are.

Mr. ROBERTS. How has that worked out?

Mr. KEY. It has worked out—I should say at the outset that I do not speak as an expert authority on that bill. I have worked in the school system and have been responsible for the administration of portions of it—in Alabama, incidentally—in years past, and feel that there it worked to our satisfaction. I have learned since that in some States it is not satisfactory, and that some States do not accept it because it is isolating a group of teachers and becomes more cumbersome in administering the bill at the State and local levels, and thus they pass it up.

If that answers your question as best as I can answer it, then may I comment further on what I have said here?

Mr. ROBERTS. Yes.

Mr. KEY. We, in thinking about this, anticipated that kind of difficulty and we felt that to stay away from the payment of teachers' salaries—not that we did not want to see this program work, but because we felt it would be to their disadvantage in the long run to single them out in this way—we felt that we should suggest that provision be made for equipment, which would be worth more in the long run for the teachers and for the program than to offer a separate subsidy for their salaries.

Mr. ROBERTS. You think it would make a much less controversial bill for all the money to go for that purpose. You would have no question of Federal control or interference, and you would have the program administered by State and local authorities.

Mr. KEY. Yes.

Mr. ROBERTS. And then you would have the advantage that this particular teacher would not be isolated from the rest of the faculty.

Mr. KEY. He would not be a fair-haired boy, so to speak.

Mr. ROBERTS. I want to thank you again. I feel you have been very helpful to the committee, and I want to thank you for coming, and we appreciate very much the excellent statement you made.

Mr. Schenck.

Mr. SCHENCK. Thank you very much, Mr. Chairman. I appreciate hearing this testimony also, and the questions I am about to ask may

seem very critical of NEA, but I would like to remind you that some years ago I was a teacher and a member of NEA. I have not come to a final conclusion as to my exact feelings on this bill either, but, first, it would seem to me that NEA is setting itself up here, by its section-by-section suggestions, as an authority on how to frame legislation rather than expressing the interest of NEA in the legislation.

Mr. KEY. May I answer that?

Mr. SCHENCK. Certainly.

Mr. KEY. That is not the spirit in which we have done it, as I said at the outset. The thinking here is based on experience, working with on-the-job educators on their problems of administration. As I said, we are not speaking here for or against the bill. We are speaking about some of the features of it that we felt might, through rather slight modifications in some instances, be less a problem in getting through and ultimately in administering it. So I am sorry if this has misled you. That is not the spirit in which this has been offered.

Mr. SCHENCK. In your first point you indicate you think this should be under the Commissioner of the Office of Education rather than the Secretary of Health, Education, and Welfare. Is not the Secretary of Health, Education, and Welfare the Cabinet rank officer of this entire Department?

Mr. KEY. That is right, sir. Again we suggested this after looking at some of the other bills in the field of education and noticing that they designate the Commissioner of the Office of Education, and we felt this would be appropriate to suggest in this case, putting it a little closer to the agency, or designating it more specifically as the responsibility of the agency which does administer funds to the States for education.

Mr. SCHENCK. And at the same time increasing the pressure for Cabinet rank for the Commissioner of Education?

Mr. KEY. Again, may I apologize. In our thinking that did not enter into it at all, not in the least.

Mr. SCHENCK. I mentioned also the same point that our chairman has very well discussed, the matter of vocational education under the Smith-Hughes Act. As I understand, both from my experience as a teacher and as president of a board of education for sometime, that Smith-Hughes program has been working very well. Yet you want to exclude the salaries of teachers in this bill.

Mr. KEY. Our first reason for suggesting this is that it will definitely run into opposition, so we are thinking in the interest of the bill in saying this in the first part and then mentioning some of the problems that do exist in many of the States. I assume these are the reasons for the opposition.

Mr. SCHENCK. Opposition from whom?

Mr. KEY. From school administrators at the State and local level, particularly. May I add, too, that school boards that have the matter of administering for the communities and are charged with responsibility for handling the whole school program, often notice this splintering effect as a difficult problem.

Mr. SCHENCK. Do the State and local administrators object to the Smith-Hughes program where a part of the teachers' salaries are paid from Federal funds?

Mr. KEY. Sir, I am not posing as an expert on that. I have seen definite indications that many of them do like it and use it, and definite indications that others do not and do decline it.

Mr. SCHENCK. Mr. Chairman, each time an appropriation bill comes up in Congress for vocational education, and particularly distributive vocational education teachers, they are writing in asking us to increase rather than decrease it, so apparently that is not a proper objection.

Mr. ROBERTS. Will the gentleman yield at this point?

I would like to comment at this point that I am not sure, we probably need more testimony, but I think driver education is affected with a little bit different Federal interest than some of the other high-school subjects in that we all know that practically every automobile is in interstate commerce at one time or other, whereas a good many of the other subjects would not necessarily be so affected.

Mr. SCHENCK. In Mr. Key's statement the question of equipment was raised and Mr. Key suggested that the money be earmarked for the purchase of equipment.

Do you know anything about any of the simulated driver-training equipment that is used in classrooms?

Mr. KEY. Yes, sir. We have observed these, and at this time we have a research person making a critical analysis, going over the literature, and endeavoring to see to what extent the transfer of learning is carried out; in other words, to what extent do these devices help the person once he moves to the streets and highways. We do not expect in this study to get the final answer, but we do expect to point up the problems and the cost. We do believe that these devices hold some promise in the field.

Mr. SCHENCK. Do you also believe there is less opportunity for Federal control where the money is spent for equipment rather than teachers' salaries?

Mr. KEY. I am not an authority on that subject, sir. I am frankly and honestly speaking in terms of doing the very best possible here. I would assume that the same principle would apply here as anywhere else so far as Federal control is concerned.

Mr. SCHENCK. Do you think there would be no Federal control in the purchase of automobiles and equipment?

Mr. KEY. I assume there would be, as in every case where Federal funds are expended, a certain amount of Federal control. That is a personal observation.

Mr. SCHENCK. You are in general agreement then that it is wrong to appropriate Federal funds without having some control over how they are spent?

Mr. KEY. I repeat I am not an authority in the matter of control at the Federal level. I do not think I would choose to take a position on that, if I may decline.

Mr. SCHENCK. How large a commission do you have on safety education? I note you are secretary of the National Commission on Safety Education of the National Education Association.

Mr. KEY. Thank you; I am glad to explain that. The commission is authorized within the official structure of the National Education Association and is composed of 15 members. These are school administrators; classroom teachers at the various levels and in various

subject-matter fields; one State commissioner of education, the commissioner of Missouri, is presently chairman of the commission. These are appointed on a 3-year rotating basis by the NEA executive committee.

Mr. SCHENCK. How large a staff do you have in your particular operation?

Mr. KEY. We have 4 full-time professional staff people and 2 temporary professional staff people, which includes the researcher I mentioned just now; and we have authorized 4 secretarial staff people; which in total at the moment would be 10 people.

Mr. SCHENCK. What is the function of your commission? Do you confine yourselves to traffic safety, or do you have other purposes?

Mr. KEY. No, sir. The Commission has the responsibility of aiding in the development of programs and carrying them out, again on an invitational basis from school systems, professional educator groups, and so forth. I think an example would be my assignment last weekend, meeting in the State of Indiana with representatives from the State department of education and college and university staff members in the development of a program or program standards for teacher preparation at the college level. The bill in Indiana that was recently enacted assigns to the State department the responsibility for setting the standards for teacher preparation.

Mr. SCHENCK. Teacher preparation for what, driver education?

Mr. KEY. Yes. In this case the driver-education program for the teachers includes the preparation in the broader field of safety education; thus the driver education is a part of a broader program of safety education. And I might say, too, that this begins at the elementary school level and carries through the high-school and college level.

Mr. SCHENCK. Does this safety education include safety in the workshop of the school?

Mr. KEY. Yes, sir, in vocational and other types of school programs, and any time the school is working with the community, which involves lay people.

Mr. SCHENCK. So it is not exclusively driver training, but that is one of its functions?

Mr. KEY. That is right.

Mr. SCHENCK. How many members are there in NEA all told?

Mr. KEY. Last month it passed the 7,000 mark in membership of the parent organization. There are many members in affiliates, such as school administrators——

Mr. SCHENCK. They are not necessarily members of NEA?

Mr. KEY. Some are not. They are not synonymous across the board. So the total in the professional family, so to speak, would run well over 1 million.

Mr. SCHENCK. And the financial support of NEA is entirely from membership fees and such inheritances or trusts and so forth as it may receive?

Mr. KEY. That is right.

Mr. SCHENCK. No part of its expense is from public funds?

Mr. KEY. That is right. I might add, in case you want the information, that our commission receives grants from year to year from the Automotive Safety Foundation, which is supported by the automotive industry.

Mr. SCHENCK. Do you have any idea how many organizations are working on this problem of traffic safety?

Mr. KEY. That is a question I cannot answer specifically. We often say there are close to 40 national organizations, and there are many others on a local or regional basis.

Mr. SCHENCK. Is any attempt made to coordinate their efforts?

Mr. KEY. There is an effort to work together. The different organizations have members that attended national conferences. I might add that the commission invites members of these national organizations to the national conferences on driver education or any other phase of traffic safety, where they participate on the same basis as any other persons there.

Mr. SCHENCK. That is all.

Mr. ROBERTS. Mr. Friedel.

Mr. FRIEDEL. Mr. Key, did I understand you correctly, in answer to questions by the chairman, that you do not recommend this bill, that you are neither for nor opposed to it?

Mr. KEY. That is right. We felt it would be better not to take a position for or against it.

Mr. FRIEDEL. I just want to quote from your statement on page 4:

> Thus, we recommend the designation of the major portion of the appropriation, particularly as a subsidy for driver-education cars and other necessary instructional equipment. We further recommend that payment of teacher salaries be left to the States.

There you mention the word "recommend," and I understood earlier you said you did not recommend.

Mr. KEY. I appreciate your comment there, sir. In view of this position neither for nor against the bill, my statement here would more appropriately mean any bill or this bill if enacted, I suppose.

Mr. FRIEDEL. I would like to refer to your statement, page 1, the last paragraph, second line, where you say:

> We have been gratified by the increasing measure of financial support which driver-education programs have been receiving within the several States.

That is up to the States alone?

Mr. KEY. Yes.

Mr. FRIEDEL. But you do recommend that the Federal Government give financial aid in the way of equipment?

Mr. KEY. Assuming that you see fit to modify the bill, and if the bill passes and is applied in the States, it would be quite appropriate, as we see it, for the Federal Government to subsidize the equipment, because this is a continuing problem.

Mr. FRIEDEL. Mr. Key, there are two programs in this H. R. 5416. One is driver education, and the other is driver training. Through our hearings, people who are supposed to be authorities have said we do not have qualified teachers to teach in the classrooms, that they are not fully equipped as teachers and they just have not had the basic material to work with. We were hoping that if this bill went through there would be certain standards that would be left to the States, but you have to have qualified teachers, and it was also included in our hearings that they also need actual training.

Mr. KEY. We concur in that.

Mr. ROBERTS. Will the gentleman yield at that point?

Mr. FRIEDEL. Yes. I just wanted to make that one point.

Mr. ROBERTS. As I understand, your suggestion is that no person will be qualified to teach driver education unless he or she is fully qualified for general teaching?

Mr. KEY. Plus the specialized training for this subject, that is right.

Mr. FRIEDEL. We found it did not work that way. Then on page 2, the last paragraph, of your statement, you say:

> We question the wisdom of including teacher trainees in this provision. In the first place, we are concerned with the public-policy implications of publicly financing what would seem to be the "entire" professional preparation for educational specialization for a selected or designated group of teachers.

Do you not think they should be specialized and highly qualified to teach driver education?

Mr. KEY. Yes, sir, that is extremely important, and I might go farther and say that it is probably more important that the teacher be specialized to teach driver education than it would be for the teacher to be specialized to teach other subjects, because here the matter of life and death is involved.

Mr. FRIEDEL. You say you question the wisdom of including teacher trainees in this provision.

Mr. KEY. Yes, the point being this, that if you designate funds and say you offer a subsidy to a prospective driver-education teacher to start at the beginning of his college and go on through his college career to teach driver education, this sets him apart and gives him something the other teachers do not have. It is in that regard we make this suggestion. In the field of a refresher type of training, that would be another matter.

Mr. FRIEDEL. Has your commission made inquiry where they have driver education or training as to whether they have qualified teachers or not?

Mr. KEY. To the same extent I think most other groups have, yes.

Mr. FRIEDEL. What were your findings?

Mr. KEY. We have found that many teachers are not as qualified as they themselves would like to be, and they are seeking more extensive preparation. Again, this is true in most fields of education today.

Mr. SCHENCK. Will the gentleman yield for one observation?

Mr. FRIEDEL. That is all I have.

Mr. SCHENCK. I would like to make this observation, the NEA is in a position of approving Federal aid to education and urging Federal aid to education, yet on this bill they take no position, but they seek to change the bill. I think Mr. Key finds himself in a very difficult and contradictory position.

Mr. ROBERTS. Mr. Bush.

Mr. BUSH. I want to commend you for the stand you have taken relative to this legislation. I have some very strong convictions about what should be done in connection with safety on our highways. Is it your experience as of now that they are doing a pretty good job throughout the country on this driver training in the schools?

Mr. KEY. I would say, sir, that more teachers have picked this program up, and with enthusiasm, having had background experience in teaching already—more of them have picked this up and moved ahead with superior type of instruction than you find in other phases of education. And I say this without criticism of those instructing in other phases of education, but most of those instructing in driver education

have done it because they see the need and feel they can make a contribution. They themselves feel their own need for improving their quality of instruction, continuing their professional growth, and it is true there are not enough good teachers in this field, and the percentage of need we are fulfilling now is a very small percentage compared to the other subjects, but this is a relatively new subject as yet, and when we look at the other side of the ledger, progress in this field has been very much faster than the development of other subject fields in the schools and colleges of the Nation.

Mr. BUSH. I think it is very fine that our schools are taking an interest in training our young people. However, there are several questions in my mind as to how far the Federal Government should go in financing a program of this type. If it is done on a local basis, they will have a little more interest, and the program will be closer home. In other words, they will realize they are paying for it and it will be a little closer to their own pocketbooks, and they will receive more benefits from it because of the fact that they will be taking a greater interest in it.

It is true that it makes no difference what area you might be from that you must have training of some kind to drive an automobile today. Is that not a fact?

Mr. KEY. Absolutely.

Mr. BUSH. Also is it not true that after they have had training they must pass some body which has the authority to give them a permit to be able to drive from one end of our country to the other?

Mr. KEY. Yes. May I just retract a moment here? If I may go back to your earlier statement I may have misinterpreted it. It is not required in all States that people have school instruction in order to get a driver's license. The law which the State of Michigan enacted last year made it indirectly required because they said in order to get a license under the age of 18, a youth must have had a course in school approved by the State department of public instruction. That is the exception so far. But, again, taking the statement in which I concur, it is true that someone has to learn enough about the car to manipulate it and get it up and down the streets and park in order to pass the driver's test in all States.

Mr. BUSH. They want to learn something about their actions when they are behind the wheel as to safety on the highway so far as they are responsible?

Mr. KEY. Yes, sir.

Mr. BUSH. According to the testimony that has been given before this committee by ones who have had training, based upon the statistics, they are enjoying a pretty good accident-prevention rate.

Of course, we realize that this has been a short-lived program and percentagewise that should apply because they are getting good training in most cases and, certainly, being made conscious of the accidents which they may cause, because if they do not do the right thing on the highway, it is brought to their attention.

From there on, after they have passed all these examinations and have gotten their permit and after they have driven a couple of years or 4 years or 5 years, they begin to get careless.

What suggestion would you have along that line to help these people who just do not have the respect or do not pay enough attention to keep themselves from having accidents or avoiding them?

Mr. KEY. Well, of course, a small percentage of people even after having had instruction no doubt will fall into that category, and in order to protect our society it seems obvious that there needs to be some plan whereby these people are eliminated or retrained or reoriented to the traffic situations. There are some communities where violators are put through schools and in some of these instances school systems are cooperating with the enforcement agencies in conducting these schools. I am not prepared to say how effective this is. I have not been that close to it, but I think, if I understand your question, that there is a need for some kind of on-going control of the traffic situations and the elimination or reorienting of the people who become inefficient or who are wilful violators.

I think I am saying about what is generally agreed upon in traffic circles.

Mr. BUSH. There is no question that one of the greatest hazards we have today involves the accidents on our highways. They are taking a terrific toll of lives; it is really a slaughter, and I think all of us would be interested in plan which will bring about greater safety on our highways.

Mr. KEY. Yes, sir.

Mr. BUSH. Of course, I think everyone is just wondering what is the best plan. Certainly this driver training at a tender age is a very good plan, in my opinion, but from there on, after they get their own automobile and get older, we still continue to have these accidents, and while statistics show that among these youngsters who have had the training the accident rate ratio is less than those who have not had it, I think, is commendable for the program, but I am still very much lost to know what plan should be adopted to create greater safety within our towns and intersections and on our highways to prevent these accidents. I think we have to give a lot of thought to the people after they become 21 years of age.

Mr. KEY. Yes, sir.

Mr. BUSH. I think one reason that we have a better accident ratio up until they are, say, 20 years of age, is because they are still under the guidance of the parents and in many cases driving the parent's automobile, and they know if they have an accident the parent is just going to say, "Well, you will not drive that car for 3 months or 2 months or, perhaps, 6 months."

In other words, it is punishment that is staring them in the face. Now, when they grow older that just does not exist to the same extent.

What plan can we adopt to help make them more conscious of their responsibilities in an effort to help prevent these accidents?

Mr. KEY. Well, of course, we would advocate education and reeducation and that one never becomes too old to learn and that conditions change, including highway design and motor-vehicle design, and, particularly, speed continues to increase, and numbers continue to increase, and the number of miles each goes is an increased factor. All of these things add up to a more complex traffic society, all the time, which seems to indicate that no one ever becomes completely efficient as they drive as drivers or as a member of this traffic society, or even as a pedestrian and, therefore, that education seems to be a very important ingredient for accomplishing and maintaining the highest level of traffic safety and, thus, efficiency.

Mr. BUSH. Do you think that our law-enforcement officers become too lenient at times?

Mr. ROBERTS. If the gentleman will pardon the Chair, let us try to stay on H. R. 5416, because we have about six more bills to cover this morning, and we have a member waiting to testify. If the gentleman will pardon the suggestion of the Chair, I would like for you to confine the testimony to this driver-education bill.

Mr. BUSH. Mr. Chairman, I am trying to stick to driving safety as much as I can and try to get some information to satisfy a question which I have in my own mind.

Mr. ROBERTS. I might say to the gentleman that there is no law-enforcement phase of this bill mentioned. I try to allow the gentleman to have all the time that they want, but I would appreciate it if you would stay right on the driver-education program.

Mr. BUSH. Thank you, Mr. Chairman. That is all.

Mr. ROBERTS. Thank you.

Mr. Loser?

Mr. LOSER. Mr. Chairman, I will not ask any questions, but I will join with my colleague, Mr. Schenck, in expressing my sympathy for Mr. Key in his effort to walk the tightrope in his testimony on this bill, and I was just wondering whether or not his embarrassment might be due to the bill with reference to Federal aid to education.

Mr. KEY. The H. R. 1 bill, you mean, sir?

Mr. LOSER. Yes, sir. I do not want you to go into that bill, but I just say that you are at great pains neither to recommend nor disapprove of this bill, but you indicate, if you are going to have such a bill, you want to indicate just how it ought to be prepared.

That is all I have, Mr. Chairman.

Mr. KEY. May I make some comment on that, sir?

Mr. LOSER. Yes.

Mr. KEY. I think we tried to do this apart from H. R. 1, and look at it in terms of what would do most for driver education in the schools of the Nation, and, while there may seem to be conflicting points of view here, ultimately, I think, these are not in conflict with respect to this bill, we think, in terms of what is operational at the State and local levels of the school systems.

Mr. LOSER. I just noticed, Mr. Key, that you call attention to the fact that a number of States have already established State subsidies for driver education, and a number of other States are going along, and the legislatures are to meet subsequent to those States that have already acted and will undoubtedly take some action in this regard, and, of course, that slows down this bill, and should, I think.

Mr. KEY. Again, sir, I would hope that it would not slow down any effort that would expedite the programs of driver education at the State level.

Mr. LOSER. On that, I thoroughly agree, but we are talking about this bill, H. R. 5416, Federal aid. That is all, Mr. Chairman.

Mr. ROBERTS. I thank the gentleman.

Thank you, Mr. Key.

Mr. KEY. Thank you, sir.

Mr. ROBERTS. Are there any further questions by the members of the subcommittee? If not, this will conclude the hearing.

(Whereupon the committee adjourned.)